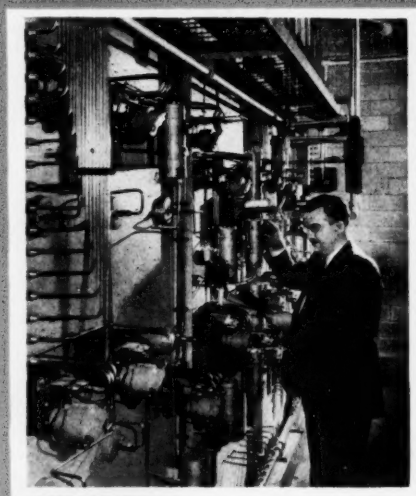
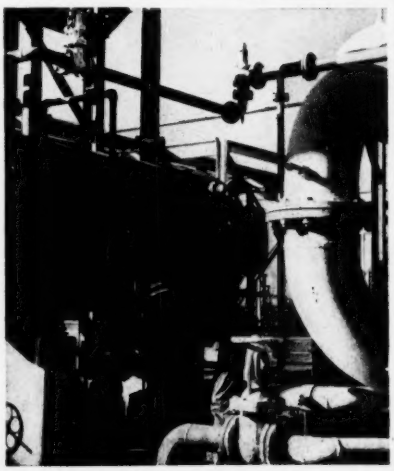
Chemical Week

November 15, 1952 Price 35 cents





Poser of the week/year: How will Capitol shift affect business climate? . . . . . p. 15

Research directors size up their jobs, say: high level education doesn't net high pay . . . . p. 34

Bargain-basement SO_2 in Canada is payoff of long range development . . . . . p. 46

Synthetic ethanol: More output in the offing, more pressure on fermentation . . . . . p. 61

Textile chemists zero in on antistatic problem, evaluate new compounds, processes . . . p. 65

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Bulk density, lbs./cu. ft.	35-40
Iodine number	80-90
Ignition loss, %	6-7

Samples and prices, promptly on request.

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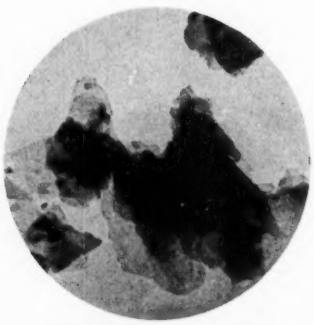

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Chemical Week

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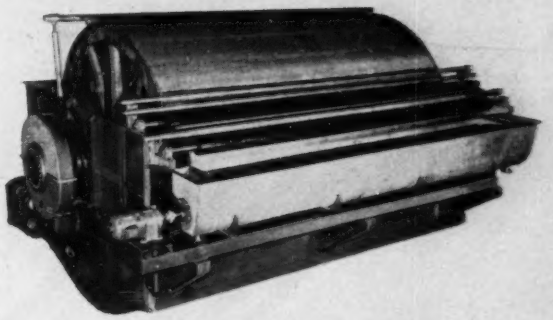
EIMCO String Discharge FILTERS



Eimco String Discharge filters are furnished where the nature of the cake makes the use of the string, to lift off the cake, a more desirable feature.

Eimco String Discharge attachments are available for high or low submergence drum filters in a full range of drum size from 25 to 678 sq. ft. of filter area and in laboratory size the Eimco String Discharge filter is proportionally designed with 4 sq. ft. of filter area.

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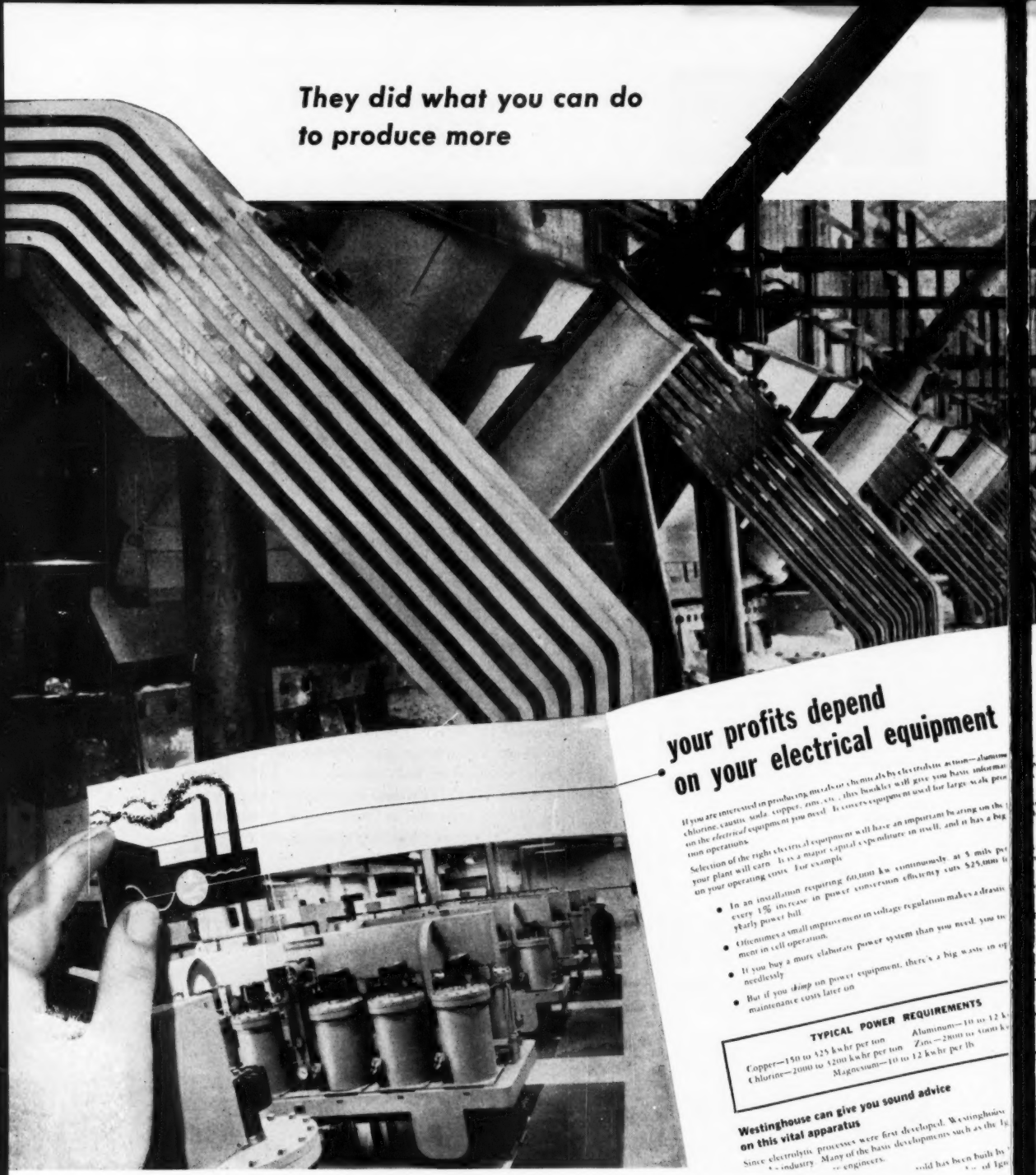
They did what you can do to produce more



your profits depend on your electrical equipment

If you are interested in producing metals or chemicals by electrolytic action—aluminum, chlorine, caustic soda, copper, zinc, etc., this booklet will give you basic information on the *electrical* equipment you need. It covers equipment used for large-scale production operations.

Selection of the right electrical equipment will have an important bearing on the profit your plant will earn. It is a major capital expenditure in itself, and it has a big effect on your operating costs. For example:

- In an installation requiring 60,000 kw continuously, at 5 mils per kwhr, every 1% increase in power conversion efficiency cuts $25,000 from yearly power bill.
- Oftentimes a small improvement in voltage regulation makes a dramatic improvement in cell operation.
- If you buy a more elaborate power system than you need, you throw money needlessly away.
- But if you *skimp* on power equipment, there's a big waste in operating and maintenance costs later on.

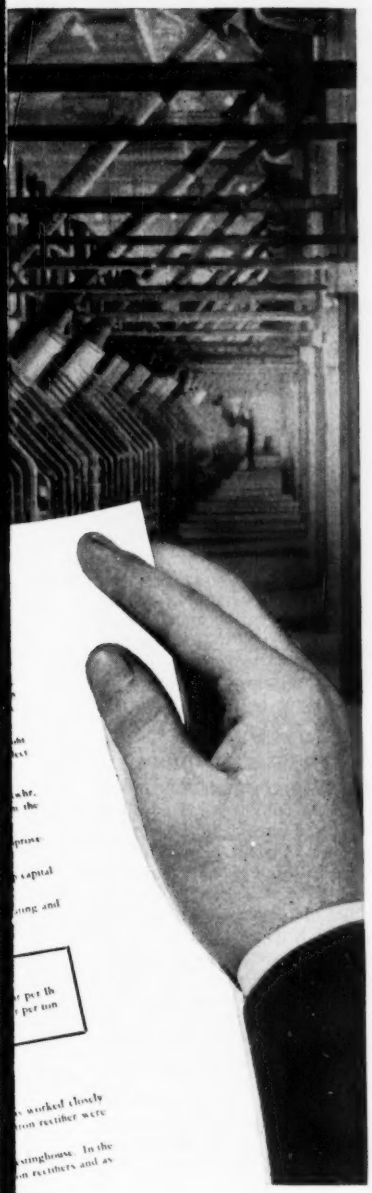
TYPICAL POWER REQUIREMENTS

Copper—150 to 425 kwhr per ton Aluminum—10 to 12 kwhr per lb
Chlorine—2000 to 4200 kwhr per ton Zinc—2800 to 3300 kwhr per ton
Magnesium—10 to 12 kwhr per lb

Westinghouse can give you sound advice on this vital apparatus

Since electrolytic processes were first developed, Westinghouse has been in the industry. Many of the basic developments such as the [illegible] engineers. [illegible]old has been built by [illegible] of Igo

Here's help in planning power for electrolytic production!



This new booklet by Westinghouse can be a valuable aid in planning power for your electrolytic processes. Each method of obtaining d-c power is discussed by Westinghouse engineers, with charts and curves showing the relative advantages of each method.

Efficiency gain means thousands annually

For example, take the matter of efficiency in converting a-c to d-c. A 2% gain means thousands of dollars in the yearly power bill. So this book discusses the efficiency of the various systems—Ignitron rectifiers, M-G sets, and rotary converters, and how the efficiency varies according to operating voltage.

Booklet provides vital operating information

Other important subjects are discussed: how and why Ignitron rectifiers have lowest first cost and high reliability; how M-G sets are best for variable voltage output, and other vital factors. It provides information on determining the best d-c operating voltage and shows why voltage should be as high as possible.

Which is the best system for your plant?

One of the major decisions is whether to buy power or generate your own. There are four popular systems in use: conversion of purchased power, a-c generation and conversion, generation of d-c with steam turbines and with gas engines. This booklet discusses the pros and cons of each system and gives a complete list of the major equipment required.

Call Westinghouse early on your project

This is all an example of the help you can obtain from Westinghouse in planning power for new processes or expansion of present ones. Call Westinghouse early in your plans.

Write now for "Power for Electrolytic Processes", B-4366, Westinghouse Electric Corp., Box 868, Pittsburgh 30, Pa.

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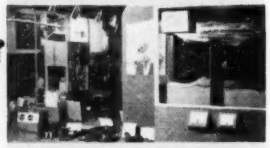
INDUSTRIAL MARKETING (June 1952)



"NEXT TO THE GREATEST SHOW ON EARTH . . . We could go on . . . reciting the fantastic properties of Silicones, but just as breathtaking as the materials were the display techniques used to demonstrate them . . ."
CIRCUIT RIDER (Vol. 6, No. 2, published by Electrical Construction and Maintenance)

". . . Heat Stability Plus: Visitors . . . see, among other demonstrations, how Silastic (Dow Corning's silicone rubber) remains soft and flexible at temperatures far above the limits of organic rubber . . ."
CHEMICAL WEEK (Jan. 26, 1952)

". . . IF YOU HAVEN'T already seen it, don't miss it when it comes around . . ."
POWER ENGINEERING (May 1952)

BUFFALO Oct. 29, through Oct. 31.
NEW HAVEN Nov. 11, through Nov. 13.
CINCINNATI Oct. 21, through Oct. 23.
BALTIMORE Nov. 18, through Nov. 20.
NEWARK Nov. 4, through Nov. 7.
WINSTON-SALEM Dec. 9, through Dec. 11.
MILWAUKEE Oct. 7, through Oct. 10.
MINNEAPOLIS Sept. 29, through Oct. 1.
ST. LOUIS Sept. 23, through Sept. 26.

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They're rubber that won't melt on hot aircraft engine cylinders or freeze on switches that operate bomb bay doors at 100° below zero.

They're electrical insulating resins and varnishes that double the power of electric motors, or multiply by 10 the life of electric machines.

They're paints that protect metal at 1000° F. They're foam killers and release agents. They're a whole family of new engineering materials that can help you to improve your product or to cut production costs.

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OPINION . . .

Research Without Capital

To THE EDITOR: It is gratifying . . . to note [on the charts showing cost of research and research salaries in the synthetic organic chemical industry (*CW, Oct. 18*)] the sharp increase in amounts spent for research. Yet it is no surprise because the chemical industry has been one of the outstanding exponents of research. . . . The continuing upward trend merely points to the progressive, forward thinking of the managements in this field. . . .

Neither is it surprising to note the use which this industry is making of research facilities outside their own organizations. It is becoming more and more evident that those companies with excellent research facilities and talent of their own are seeking the advice, counsel, and experience of outside laboratories on a vast number of allied problems. This collaboration enables the industrial research department to expand its facilities, staff, and contacts many-fold at no additional capital cost to the company. The resultant products and ideas stemming from the two groups working together have paid handsome dividends in numerous instances. I expect to see this type of cooperation increase in other industries.

You are to be congratulated in securing and publicizing such data. . . .

CLYDE WILLIAMS
Director
Battelle Memorial Institute
Columbus, Ohio

Don't Bypass Placement

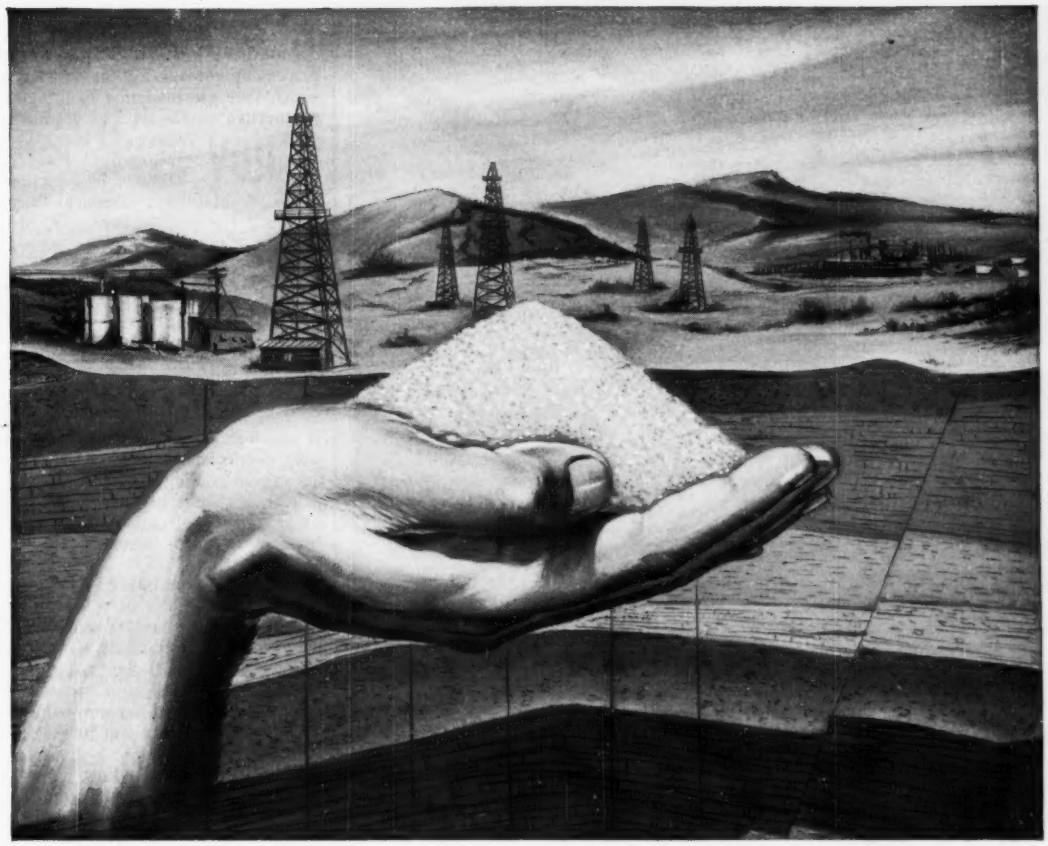
To THE EDITOR: "Welcome Mat is Out" [*CW, Oct. 18*] is an excellent article on the subject of college recruiting . . . should arouse lots of comment by bringing this subject to the attention of your readers. We have found that the placement bureaus can be of great help . . . but too many companies still prefer to go directly to the professors in charge of departments because they believe they get more personal service and cut "red tape." However, we think this practice should be discouraged as is being done in most universities.

H. B. DEVINNY
Director of Industrial Relations
The Davison Chemical Corp.
Baltimore 3, Md.

Lining Up Men

To THE EDITOR: I enjoyed very much reading the roundup on college recruiting in your Oct. 18 issue.

Your article covered the field very well, and I particularly note the well-



"Lift-up powder" for tired oil wells

How Celite filtration helps boost oil output

TO BOOST THE OUTPUT of "tired" oil wells bordering on the limit of economic production, profit-conscious operators inject water under extreme pressure into the porous oil sandstone and force out the accumulated oil. But first, they filter this repressurizing water with Celite* to remove the suspended solids which would eventually clog the microscopic pores of the sandstone, thus blocking the flow of water. *All waters contain at least a trace of these troublesome impurities.*

Celite's ability to do an exceptional filtering job can be attributed to these important factors which make it unique among filter aids:

Carefully processed from the purest deposit of diatomaceous silica known, Celite is available in nine standard grades—each designed to trap out suspended impurities of a given size and type. Whenever you reorder, you are assured of the same uniform, accurately graded powder received in your initial order. Thus, with Celite, you can count on consistent clarity in your filtrates—at highest rate of flow—month after month, year after year.

The secondary recovery of oil by water flooding is just one of many processes in which Celite has provided the absolute clarity vital to a successful operation. The proper grade of Johns-Manville filter aid will assure you the same results—regardless of the product or process involved. To have a Celite Filtration Engineer study your problem and offer recommendations, simply write Johns-Manville, Box 60, N.Y. 16. No cost or obligation.

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OPINION . . . . . .

deserved credit which you give to the placement bureaus for the assistance which they are rendering in bringing prospective employers and graduates together. . . .

ROBERT C. HENDON
Director of Personnel
Mathieson Chemical Corp.
Baltimore, Md.

Add One to Micros

TO THE EDITOR: We found the CW Report, "The $100 Million Market for Waxes" (Sept. 27), to be most interesting and informative. The authors are to be commended on their thoughtful handling of so broad a subject. Most of the facts were well planned. We do feel, however, that the authors have overlooked Bareco's position in the microcrystalline wax business and that they should have included our name along with others who have "well established positions in the field."

We began producing microcrystalline waxes in 1935 and for the past six years have operated a refinery for the exclusive production of them. Utilizing the authors' figures for U.S. production of microcrystalline waxes in 1950, we find that Bareco produced in that year 28.7% of the country's output of these materials.

Using the Bureau of Mines Reports, the authors' source of production information, we find also that in 1951 a similar percentage of the total was produced by us . . .

That Bareco does have a "well established position in the field" can hardly be denied . . .

B. H. CLARY
Vice President
Bareco Oil Co.
Tulsa, Okla.

Not All Toxic

TO THE EDITOR: The last paragraph in the letter written by Mr. Emerson Venable and published in your Oct. 18 issue mentions: "In view of the toxicity and industrial hygiene problems of some waxes – particularly – halogenated wax-like materials."

We hope that none of your good readers get the impression from this statement by Mr. Venable that all halogenated waxes are toxic. As a matter of fact, our brand of chlorinated

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.

A problem in formulation or processing?

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(CARBOXYMETHYLCELLULOSE)

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LAUNDRIES. As a film-forming agent, Sodium CMC is useful as a complete or partial replacement for starch. Its soil-suspending properties increase the washability of soiled fabrics.

PAPER. Sodium CMC has possibilities as a calender stack or beater additive for improving Mullen and tensile strength of paper. Increases resistance to ink and grease penetration.

ADHESIVES. Useful as a water-soluble, non-staining wallpaper paste, and as a modifier for other adhesive formulations.

TEXTILES. As a low-cost modifier, Sodium CMC readily combines with resin finishes to control stiffness and "hand" of the finished cloth. Excellent results are also obtained in warp-sizing viscose rayon, cotton and combinations of these fibers with other yarns.

ORE TREATMENT. Sodium CMC acts as a settling or dispersing agent for finely divided ores, depending on the system involved and the conditions of use.

First marketed in 1945, Du Pont Sodium CMC is well-known for its excellent performance in the detergent industry. The addition of small amounts of Sodium CMC to a detergent formula provides greater soil-suspending action . . . assures brightness for fabrics, even after repeated laundering. Readily water-soluble, Sodium CMC serves as a film-forming agent, protective colloid or thickener in aqueous solutions.

Such properties are expanding the field of application of Du Pont Sodium CMC in a wide variety of industries. In paper making, adhesive manufacture, textile processing and many other fields—this low-cost dispersing agent offers many opportunities to increase efficiency. And the list is constantly growing as new uses are developed.

Can Sodium CMC solve *your* problem?

Perhaps these developments suggest a use for Sodium CMC in *your* product. Du Pont Sodium CMC is now available in a wide range of low-cost technical grades—ideal for laboratory experimentation. Our technical staff will be glad to help you on specific applications. For more information, clip and send the coupon below to: E. I. du Pont de Nemours & Co. (Inc.), Chemical and Miscellaneous Sales, Explosives Department, Nemours Bldg., Room 2539-B, Wilmington 98, Delaware.

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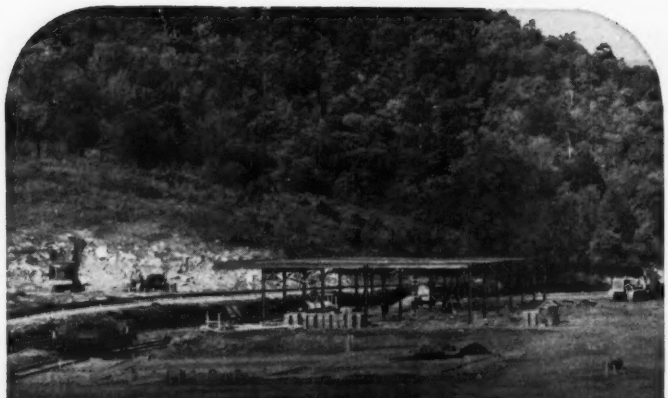

phase 4:

Foote's new lithium chemical plant

Warehouse and offices under construction at Sunbright, Va.

...the steel will be up

By the time you read this, the shovels will have gone, the foundations will be poured and steel will be up at Foote's new, large lithium chemical plant at Sunbright, Virginia. This is another step in Foote's program to overcome current shortages arising from the unprecedented demand of industry and the government for lithium chemicals.

phase 3 — Pilot plant operations of new lithium process developed by Foote research.

phase 2 — Kings Mountain, N.C. — Mining largest known deposits of spodumene.

phase 1 — Continuing Foote research . . . finding new and improved uses for lithium chemicals.

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A Step Ahead in Industrial Ores and Chemicals

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RESEARCH LABORATORIES: Berwyn, Pa.
PLANTS: Exton, Pa.; Kings Mountain, N.C.; Sunbright, Va.

OPINION . . . . . .

paraffin, Chlorowax (R), is non-toxic by both oral and patch tests.

These tests have been made by an outside laboratory and full particulars are available upon request . . .

H. S. Olson
Technical Service Division
Diamond Alkali Co.
Cleveland, Ohio

To The Editors: Mr. H. S. Olson of Diamond Alkali has kindly sent me a carbon copy of his letter to you questioning my comments on the toxicological and industrial hygiene problems of waxes.

The most serious problem . . . is that presented by the halogenated naphthalenes and diphenyls. These materials not only cause severe dermatitis but also systemic poisoning . . . several deaths have been attributed to their use. Patch tests . . . gave negative results . . .

With respect to the chlorinated paraffin waxes I quote from Schwartz and Tulipan, "Occupational Diseases of the Skin" . . . "Dermatitis from pure paraffin is rare, but paraffin is often chlorinated and dermatitis sometimes occurs from chlorinated paraffin.

I have personally experienced dermatitis from chlorinated paraffins. This occurred back in the '30's . . . was from chlorinated paraffins imported from Germany.

I am very glad to hear that Diamond will guarantee that their material will not present any industrial hygiene problems for the user. Because chlorinated paraffins from different sources have given different physiological reactions, the formulator should keep this in mind in each particular application.

Emerson Venable
Pittsburgh, Pa.

MEETINGS . .

American Standards Assn., 34th annual meeting, Waldorf-Astoria Hotel, New York, N.Y., Nov. 19.

National Fertilizer Assn., annual fall convention, Roney Plaza Hotel, Miami Beach, Fla., Nov. 19-21.

Manufacturing Chemists' Assn., second semi-annual meeting and conference, Hotel Statler, New York, N.Y., Nov. 25.

Society of Plastics Industry, Sheeting and Coated Fabrics Division Conference, Commodore Hotel, New York, N.Y., Dec. 4-5.

American Institute of Chem. Engrs., annual meeting, Cleveland Hotel, Cleveland, O., Dec. 7-10.

Society of Cosmetic Chemists, semi-annual meeting, Biltmore Hotel, New York, N.Y., Dec. 11.

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BRAND

HEAT EXCHANGERS

SIZE. There is virtually no limit to the amount of heat-transfer surface obtainable in "Karbate" impervious graphite shell-and-tube-type heat exchangers. Large capacity requirements are readily met, either by a combination of standard Series 310A and 90A "Karbate" heat exchangers or with special units manufactured by the country's leading producers of heat exchange equipment.

SERVICE. There's ample evidence that "Karbate" heat exchangers already occupy an important place in practically every type of severely corrosive service. For example, among suppliers of heat-transfer equipment for the process industries, there are 57 manufacturers and service organizations who now depend on "Karbate" impervious graphite equipment to solve their customers' toughest corrosion problems!

Write for Catalog Section S-6740— New Standard "Karbate" Heat Exchangers

DOLLARS *and* SENSE

. . . point to "Eveready" No. 1050 Industrial Flashlight Batteries . . . the cells that deliver *twice as much* usable light as any battery we've ever made before. Their unique construction prevents swelling or jamming in the case . . . has no metal can to leak or corrode.

The terms "Karbate" and "Eveready" are registered trade-marks of Union Carbide and Carbon Corporation

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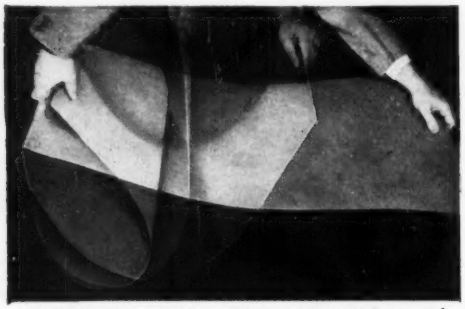
NEW KITCHEN BEAUTY! Revolutionary new G-E Textolite* MONOTOP counter surfaces resist attack by dirt, dents and small daughters. * Reg. U. S. Pat. Off.



FOR INDUSTRY—NEW FLEXIBLE LAMINATES are made possible by G.E.'s *rubber-phenolic* varnish, which imparts about *twice* the resilience obtained from conventional varnishes.

TOMORROW'S KITCHEN—TODAY

—THANKS TO G-E CHEMICAL PROGRESS IN PLASTICS LAMINATES

It's the biggest news in kitchen equipment in years! G-E Textolite MONOTOP surfacing, a brand-new contribution of General Electric chemical progress, is a counter top and backsplash *molded in one piece!* The "no-drip" lip keeps spilled liquids from running down cabinet fronts and there are no cracks or crevices in the unit to collect food particles or dust.

Other G-E contributions in plastics laminates include lightweight refrigerator "inner doors," many specialized parts for the electronics industry, and a complete line of laminated sheets, tubes and rods for a variety of industrial applications. Look to General Electric chemical progress for the latest developments in:

PLASTICS COMPOUNDS AND RESINS • SILICONES
INSULATING MATERIALS • COATING RESINS
PLASTICS LAMINATING, MOLDING AND EXTRUDING

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NEWSLETTER

Less Washington-in-business may be a future hope under the new administration, but this week businessmen are confronted with what amounts to a government agency's setting up its own lobby.

The agency: The Food and Drug Administration.

The "lobby": a panel of consumer consultants consisting of 16 women assigned to FDA's district offices.

The purpose: "to answer a long-felt need to establish closer contact with the buying public" by giving the FDA the views of the average purchaser of products regulated under the Federal Food, Drug and Cosmetics Act.

Most of the consultants already have been given "assignments" to make consumer surveys relating to establishment of food standards.

Rosin-extended rubber is the focus of all eyes in the tire industry at the moment. The addition of rosin to extra-tough type cold GR-S increases resistance of tires to tread cracking, cuts.

U.S. Rubber is doing pilot plant work at Naugatuck, Conn. (this issue, p. 42), and Phillips Chemical has made a small batch at Borger, Tex.

Italy is the first nation to sign an agreement on interchange of patent rights and technical information which several U.S. Government departments have been negotiating with NATO countries. Great Britain and other countries are expected to sign shortly.

Negotiation of such agreements by NATO members was part of the Mutual Defense Assistance Agreement signed in January, 1950.

The agreement gives governmental backing to exchange of know-how for defense purposes; rights of private owners of patents and information, however, are protected.

Incidentally, a panel of advisors that the Office of Technical Services called in to give an opinion on the agreement included Monsanto's Frank Curtis.

It's not definite yet, but this is the way ICI and Du Pont will probably end their joint (84%) ownership of Canadian Industries, Ltd. (per U. S. District Court order): A split of the company into two companies, with minority holders sharing with Du Pont and ICI ownership of each new company. That's the move recently indicated by a Du Pont official as most likely.

It doesn't look as though they will take the other possible way out: One sell its interests in CIL to the other.

The drought and subsequent power shortage are hitting aluminum producers not only in the Pacific Northwest, but in the Tennessee Valley as well. The industry, fearful of a 150 million-pound backlog of orders by year's end, has appealed to the government to (1) suspend stockpiling, (2) withdraw material from the stockpile during the temporary shortage, and (3) secure additional aluminum from abroad.

Further cuts in power are scheduled for November 17 for indus-

trial consumers in both sections (the Northwest has already felt a 100% slash in interruptible power). This will boost to about 40 million pounds a month—25% of the nation's capacity—the amount of primary aluminum production that the power shortage is knocking out.

In the specialties field this week, the big news is a toning-down of advertising claims for laundry detergents. Four manufacturers signed agreements with the Federal Trade Commission to discontinue claiming their products wash clothes as clean without rinsing as with rinsing.

The four (and their products): Colgate-Palmolive-Peet (Fab); Procter & Gamble (Tide, Cheer); Lever Bros. (Surf); and Theobald Industries (Hum).

In addition to eschewing the "no rinse" pitch, Theobald Industries agreed to cease claiming Hum protects colors in dyed material, and that it produces more suds than other synthetic detergents.

These stipulations are in line with FTC's policy of encouraging observance of the law "through cooperation in certain types of cases where there has been no intent to defraud or mislead."

Israel is not far behind Japan (this issue, p. 30) in getting into saran production. A plant is now being built by United Saran Corp. Ltd., under license from Dow Chemical International, at Rehovoth, Israel.

Key personnel are being trained in this country and they in turn will train Israelis to manufacture and weave the plastic fibers.

What is described as "the first full-scale oil refinery in the Pacific Northwest" will be built by General Petroleum Corp., a wholly-owned Socony-Vacuum subsidiary, at Ferndale (near Bellingham), Wash. Capacity will be 35,000 barrels a day, cost $35 million, completion date 1954.

Crude will be brought from Alberta oil fields by extending the Edmonton, Alta.-Vancouver, B.C., pipeline, now under construction, across the Canadian border to Ferndale. Trans-Mountain Oil Pipeline Co. is building the 711-mile, $86-million line; will extend it the extra 30 miles at a cost of $2¾ million.

Another pipeline—this one for natural gas—came a cropper before building got under way. The Federal Power Commission vetoed the application of Texas-Ohio Gas Co., Houston, to build a 1,416-mile line from Texas to Lancaster, O., and to import natural gas from Mexico.

FPC said that Texas-Ohio did not submit gas reserve or deliverability estimates in support of its gas commitment, and that not enough of proposed field gas purchases were covered by proper form of purchase contracts.

The two electric generating stations to be built for the gaseous diffusion plant of the Atomic Energy Commission near Porthmouth, O., have gotten the go-ahead on financing arrangements.

Securities and Exchange Commission has okayed proposals of Ohio Valley Electric Corp., and its subsidiary, Indiana-Kentucky Electric Corp., for financing. Money (estimated at $370-440 million) will be raised by sale of debt securities to institutional investors and banks, and by sale of $20 million of equity securities to utility companies joining in the enterprise.

Development and standardization of tests for soil conditioners will be getting the attention of interested groups working with the American Society for Testing Materials.

. . . The Editors

NEW POLYMERS NEW PROPERTIES

	DISSOLVES IN	PROPERTIES ATTAINABLE
ETHYL HYDROXYETHYL CELLULOSE (EHEC-3U)	Liquid hydrocarbons of KB value greater than 35. Mixtures of 96 heptane, 4 isopropanol. Esters, ethers, ketones.	High-melting films. Thickens liquid hydrocarbons. Addition of 0.2-0.3% to pigmented enamels has antifloating effect.
CARBOXYMETHYL HYDROXYETHYL CELLULOSE (CMHEC)	Soluble in water, not soluble in usual organic solvents. Resistant to precipitation by salts and ions.	Useful in coatings and sizes for textiles and paper, polishes, detergent formulas, and control of foam stability. Water-sensitive films with desiccant power, and good compatibility with sulfonated oils and proteins.
HYDROXYETHYL CELLULOSE (NATROSOL*)	Aqueous solutions containing 2% to 15% of NaOH or other strong alkali. Insoluble in usual organic solvents.	Coagulant aid in alum clarification of water; depressant for silica in mineral and oil separations. Valuable as a textile finish. Water-sensitive films with desiccant and adhesive powers; thickens alkalies.

*TRADEMARK REGISTERED

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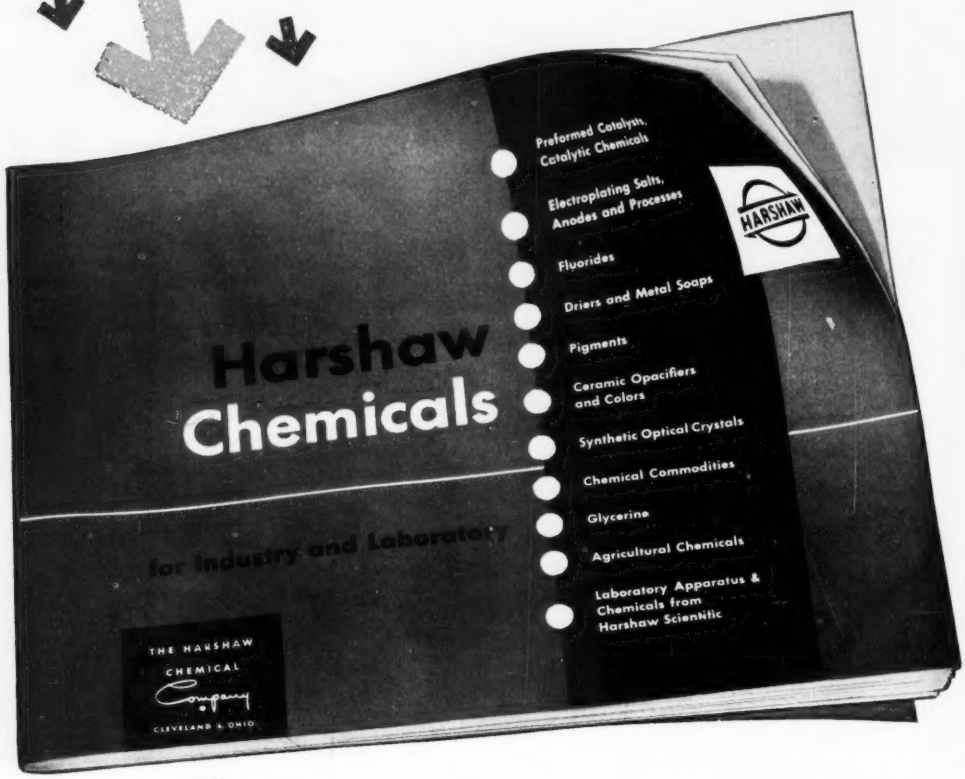


This 16 page illustrated booklet describes the major activities of The Harshaw Chemical Co. It lists manufactured items and offers booklets which furnish more specific information about these Harshaw products.

THE HARSHAW CHEMICAL COMPANY
1945 East 97th Street, Cleveland 6, Ohio

Send me a copy of your booklet
"Harshaw Chemicals for Industry and Laboratory"

MY NAME _____ (Please Print)

CO. NAME _____

STREET ADDRESS _____

CITY _____ ZONE _____ STATE _____

THE *Harshaw* CHEMICAL COMPANY
CLEVELAND 6 OHIO

November 15, 1952 • Volume 71 • Number 20

Chemical Week

BUSINESS & INDUSTRY . . . . .

DICK WOLTERS

PENNSYLVANIA AVENUE: Still a business main street.

Now That It's Over

With the election in the past, businessmen wonder about the administration they'll live under come January.

Best bet: No decided changes, but a slight edging toward conservative ideas.

But Washington still looms large in plotting business plans of the future.

Washington chemical representatives on their way to the office last Wednesday were shivering slightly from a combination of a brisk (18 mph.) wind and a chilly (39°) temperature.

But by 2:30 that afternoon, the sun, shining in an almost cloudless sky, had warmed Washington up to an almost unseasonal 59°. (A year before, the temperature was 43°.)

Perhaps it was symbolic—at least, a number of the Washingtonians seemed to agree. Their forecast of business-government relations during at least the next two years: fair and warmer.

But no one was making specific predictions—not with conditions on Capitol Hill as unsettled as they are.

In general, however, they forecast an administration favorable to business. A definite pointer to which way the wind is blowing will come when the excess profits tax—bane of growth industries like chemicals—comes up for discussion. Predict the reps: EPT will expire June 30, on schedule. And once this happens, it would be difficult for the administration not to also let die the 10% post-Korea personal income tax increase next December.

The new government will scrutinize the whole economic control program (due to expire April 30). And it may decide that the best way to weather economic storms is to use indirect controls.

Some people see deflation as a more pertinent problem than inflation. Among their reasons: Military spending could slack off, bringing some kind of business readjustment. Actually, it will be difficult to change the present level of disbursements. The budget for 1953 is pretty well set (*CW, Nov. 8*), and even if Congress cuts this back, it wouldn't show up in military spending before 1955.

Despite the fact that bellwethers in Congress are economy-minded, there is little chance that federal research funds will be cut back. Perhaps there may be some increases.

Forecast for Fissioners: Operations of one of the largest spenders of research funds, the Atomic Energy Commission, will be reviewed. The Atomic Energy Act may be amended to further encourage private participation in nuclear fields or to modify some of its secrecy provisions.

And barring another military storm, it is felt that expansion-via-tax amortization is just about over. Any future industry expansion will take place without such helps.

Invasion Invectives: On the anti-trust front, it isn't safe to assume that activity will drop. The "ins" are always sensitive to charges of favoring business; witness the Republican 80th Congress, which stepped up funds for anti-trust prosecutions.

The new attorney-general will, however, review trustbusting policies before beginning any new suits. Cases now in the courts or filed before January are sure to be pressed.

Some of the government's toe-stepping on industry, too, will be spot-lighted. The Tennessee Valley Authority's commercial fertilizer operations are likely to come under Congressional scrutiny.

Whatever such an investigation may turn up, fertilizer manufacturers can at least look for the Department of Agriculture to encourage greater fertilizer use because of the need for producing more crops on a decreasing farm land area.

Food additive manufacturers, though, may be on the other side of the fence from their fertilizer-making cousins. The squall over chemicals-in-foods will be as blustery as ever.

Re-elected Rep. James Delaney plans to introduce a bill embodying his committee's views on food chemical control.

Don't expect any radical changes right away in either the Food and Drug Administration or the Public Health Service. Each is essentially non-political. The Federal Security Agency, boss to FDA and PHS, however, may be broken up. FDA could be shifted into the Department of Agriculture (as the Hoover Commission recommended) and Public Health be made an independent agency.

Worker Worry? The barometer will change—to a degree—on the labor-management scene. Labor may have less influence on government, though the administration's door will be kept open to labor leaders.

The Taft-Hartley law will probably be amended slightly. This, most likely, will not eliminate the closed shop ban or the 80-day no-strike injunction. Employers will have to sign non-Communist affidavits as do labor leaders.

Social security policies will be looked over, and perchance improved through a provision for a flexible retirement age. The dollar-an-hour minimum wage probably won't be changed.

Foreign Forethoughts: There is general agreement that dollar aid from the U.S. will no longer solve the basic economic problems of the free world.

Europeans have been hoping that Washington would seek to close the dollar gap by reducing U.S. tariffs and creating a stabilization fund to back limited convertibility of currencies. There's a little chance for either.

In fact, Congress may take the opposite tack. The outlook: some continued economic aid, but less of it; military aid on about the same level; tariffs at present levels or higher; aid to underdeveloped areas on about the same scale as before; and few radical reforms of foreign investment and trade policies.

Fluoride Tally

Water fluoridation, last surveyed by an official body during the Delaney Committee hearings, has been reviewed again—but with a difference. Its scientific and legal aspects have been summarized for a body of officials—the National Institute of Municipal Law Officers.

The most welcome contrast, however, is that NIMLO feels fluoridation of public water supples is "effective, safe, economical, and constitutional."

Authors of the report* are two of the institute's legal staff, Charles S. Rhyne and Eugene F. Mullin, Jr.

From the various records they have written a concise reference work for anyone concerned with fluoridation.

Technical Conclusions: Children who consume fluoridated water from birth will have up to two-thirds fewer cavities than those drinking fluorine-free water. Adults, too, receive some benefits. When used at recommended concentrations, fluorine will not mottle teeth, and will have no harmful physiological effects.

Legal Conclusions: Fluoridation is not an unconstitutional invasion of the right of religious freedom. It is a permissible function of the city, and will not leave municipalities open to damage suits. It does not violate federal laws.

These conclusions have been stated before—though perhaps not as concisely. Equally interesting is their reasoning on some related points.

They feel that the Delaney group advised a slowdown of fluoridation because it was "psychologically prepared" by previous testimony on pesticides and food additives to reject anything "not supported by conclusive evidence ruling out every conceivable possibility of harm. In considering fluoridation of water, the committee was less impressed by the overwhelming scientific evidence of its benefits than by the insufficiency of the evidence to disprove every fear that had been expressed."

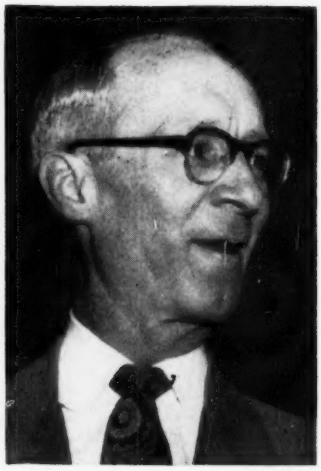
In reviewing various court cases, they report that the religious issue seems to be considered the most telling argument against the program.

The criterion, they feel, is that if the city council or other law-making group, supported by most scientific opinion, decides that the incidence of dental caries is serious enough for it to act, the courts can hardly stop such action on the ground that caries are less serious than, say, smallpox. (Courts have ruled that a city may compel vaccination—which also may be objected to on religious grounds.)

They stress that one of the best ways to eliminate objections is through a wise public relations policy—especially so since many objections seem to be psychological.

An example: Officials at Fulton, N.Y., where the program has been approved but where the tasteless fluorides aren't as yet being added, are already getting complaints about the taste of the water.

* Available at $3 from NIMLO, 730 Jackson Place, N.W., Washington 6, D.C.



WIDE WORLD

KNIGHT: More allies, more power, more gains.

Coterie With a Yen

A scheme for a loose confederacy of labor unions for joint action within the oil and chemical industries to win new advances for union members is being proposed this week by the Oil Workers International Union (CIO). Such an alliance is regarded as a possibility by officials close to O. A. (Jack) Knight, president of OWIU and architect of the coalition of oil unions that waged the nation-wide refinery strike last spring. The coterie of unions suggested for the oil, chemical and related industries would be a broad, horizontal extension of that coalition.

Craving for Gains: As visualized by OWIU officers, the union entente would be designed to battle for ever greater benefits for the workers. Its hunger for wages-and-hours gains is expressed in this implied invitation for chemical unions to rally to the cause:

"In keeping with the great American tradition of more and more of everything, as exemplified by the constant march of the employers toward more production, more sales, and more profits, we too shall continue to want more; and in that connection, it is the plan of the coalition to extend itself as far as possible, as fast as possible, and become as strong as possible, to win as much as possible for the employees of oil and allied industries."

Ray Davidson, OWIU public relations director, makes it clear that his union considers the chemical industry as "very closely allied" to the oil industry through the petrochemicals branch.

Preparations Afoot: The coalition that conducted the refinery strike is still active. Representatives of member unions held a meeting in Chicago last month to formulate the general lines of a long-range bargaining program, and plans now are being made to prepare the participating unions for campaigns that the coalition may decide to launch. However, it is understood that no specific bargaining demands have been adopted for the immediate future.

Although the coalition didn't win all the goals it aimed at last spring, the degree of success that it did attain was enough to hearten its members, and to give them cause for trying the same tactics on a larger scale in the future.

About 85 delegates from 18 unions, including some independent and AFL unions, met in St. Louis last November to organize the coalition. At the second meeting, held last February in Chicago, 22 unions with total membership of 225,000 workers were represented. A few unions weakened and signed contracts at company terms, but for the most part, the coalition held together through the two-week strike last May and garnered a 15¢ general wage increase plus 6¢ and 12¢ shift differentials.

Thus far, there has been only aloofness or hostility in relations among the three major unions in the chemical industry. But if any one of these three unions should decide to band together with the coalition, the other two chemical unions might be afraid that if they stay out, they'll get left behind on new wage gains.

Illustrated Labels

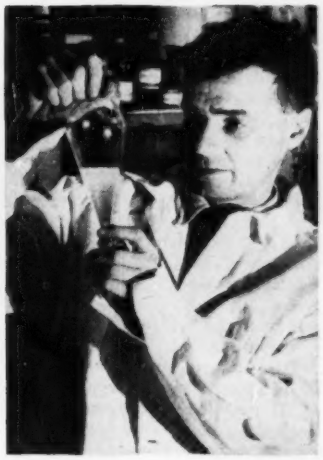
Picture symbols for containers of hazardous chemicals and expanded training programs for chemical employees head the list of suggestions that are now up before the International Labor Conference, and which may be passed on to the legislatures of the individual member nations for possible enactment into law.

These proposals have been transmitted to the governing body of the International Labor Organization by ILO's Chemical Industries Committee, following its recent meeting in Geneva. Worker, employer and government delegates were in substantial agreement on those two points, but they split on other issues.

Purpose of the resolution on picture symbols is to enable chemical workers throughout the world to recognize containers of dangerous substances by labels, regardless of language. At present, poisons are marked with the skull-and-crossbones; under the new proposal, other symbols would be adopted to identify explosives, caustics, inflammables, etc.

Vocational training, the committee holds, should not simply fit each worker for one job, but should help young workers adapt themselves to changing conditions. Training for supervisors should include instruction in human relations.

Worker and employer delegates differed on questions relating to overtime, shift work, and the 40-hour week. During the discussions, the worker delegates warned the employers not to cling to "a negative attitude" toward raising social standards.



Award for Analysis

NOBEL CHEMISTRY PRIZES went to two British scientists for their joint development of liquid-liquid partition chromatography. Archer J. P. Martin (*left*) now works for the National Institute of Medical Research in London. Richard L. M. Synge is connected with the Scottish Rowett Research Institute in Aberdeen. Their work made possible the separation of such water-soluble compounds as carbohydrates and amino acids.

EXPANSION . . . .

Ethylene Oxide, Glycols: Allied Chemical & Dye's Nitrogen Division will begin construction this month on its $5 million chemical plant at Orange, Tex. Completion of the plant, which will manufacture ethylene oxide and glycol, diethylene glycol and triethylene glycol, is scheduled for early 1954.

•

By-Product Coke Ovens: Youngstown Sheet & Tube will add a 76-oven by-products coke battery at its Youngstown, O., works. The cost has been estimated at $10 million; the expansion will increase its coking capacity by 35%.

•

Pyridines: Phillips Chemical has begun production of methylvinyl pyridine at its Adams Terminal plant near Houston.

• Incidentally, Phillips has begun production at Borger, Tex., of a new furnace black with high abrasion resistance—Philblack E.

•

Refinery Notes: Humble Oil has awarded M. W. Kellog the design and construction contract for a solvent de-asphalting plant at Humble's Baytown, Tex., refinery. Construction of the de-asphalter—which will charge 28,000 barrels of vacuum-reduced crude daily—will begin in early 1953.

•

Hydrazine: Fairmont Chemical has put a new hydrazine unit onstream at its Newark, N.J., plant. The unit will produce hydrazine base, hydrate, sulfate, and other salts.

COMPANIES. . . .

Stock sales were in the news this week as three companies prepared to market their securities:

• Magma Copper will sell its stockholders $6 million worth of stock to finance its part in the development of the Arizona low-grade copper ores

leased by its subsidiary the San Manuel Copper Co. In addition to the $6 million, it will furnish $2 million from its own funds for the development. Magma already has spent $11.5 million; the rest of the money will come in the form of a $94 million loan from the Reconstruction Finance Corp.

• Thurston Chemical will sell 40,000 shares of its 5.5% cumulative preferred stock ($25 par value). A total of 84,130 shares of the company's common stock simultaneously will be sold for a stockholder. Money received, plus a $1 million bank credit, will go to finance plant expansion.

• Redwater Utilities Holdings Oil & Gas, Ltd. will sell 1.2 million shares of its common stock at approximately $1.50 per share. The company has leases on promising oil land in Montana and West Canada.

•

Universal Oil Products has followed the trend to the suburbs. It and a subsidiary, Procon, Inc., have moved from Chicago to Des Plaines, Ill.

•

Two company mergers were under consideration by their stockholders this week:

• The absorption of O-Cel-O, Inc., Buffalo manufacturer of cellulose sponges, into General Mills was overwhelmingly approved by stockholders.

• Consolidated Feldspar Corp. will be absorbed into International Minerals & Chemical through a stock exchange, if approved by Consolidated's stockholders. The company mines feldspar and a number of other minerals.

•

Celanese subsidiary Celgar Development has finally received a license for the timber it will need for its pulping operations. The company plans a $65 million integrated operation, near Arrow Lake, British Columbia, in which it will work a 1,500 square mile forest area. There are still a number of limitations on the license: Parts of the area may be withdrawn by the government for higher economic use—agriculture, mining or industrial development; the public may still prospect in the area.

•

Film Maker Folds: Complicated bankruptcy proceedings of the once flourishing Kryptar Corp. are winding up in Rochester, N.Y., this week with final dividend payment (20¼% after taxes and secured claims) to creditors. After liquidation, assets were $753,661 and liabilities totaled more than $1 million. The firm, starting as Technifinish Laboratories, Inc., grew in seven years from a kitchen photo-finishing enterprise to a $3 million/year business in direct competition with Eastman Kodak and Ansco in manufacturing roll film.

DPA's LATEST TAX WRITE-OFF LIST

Company, Location	Product	Amount Certified	% Certified
Gulf Oil, Philadelphia, Pa.	Sulfur	$1,130,800	70
Arizona Chemical, Panama City, Fla.	Alpha, beta pinene, solvents	635,000	45
Fine Organics, Lodi, N. J.	Phenylephrine	26,876	50
American Cyanamid, Pearl River, N. Y.	Special vaccines	3,200,000	45

'Help Wanted' Bait

The man who invented the moose-call to conjure up bull moose monsters from Northern lakes has nothing on Jules G. Chartier, an industrial relations manager who has hit upon the magic words to make talented chemists and engineers materialize right out of the current scarcity of technical personnel.

Blondish, bi-lingual Chartier, who works for U.S. Rubber's affiliate in Canada, the Dominion Rubber Co., does the trick mostly with classified ads. These advertisements are different from most "help wanted" appeals in these respects:

• They are much larger than the ordinary want ad, and Chartier doesn't try to jam the message into a few lines of abbreviated stereotypes;

• His texts are scripted with restraint and dignity, making for a favorable impression of the company; and

• These ads always contain phrases that entice men who have ambition for an onward-and-upward career with responsibility and a chance to run things.

Easy-going Tempo: There's a calm, leisurely pace to the wording of Chartier's ads that attracts men of science. This take-your-time-to-make-your-pitch technique provokes technicians to answer the ads in droves, even though the ads don't tell the company's name and professional people generally are reluctant to reply to "blind" ads.

Dominion and Chartier first became classified-happy about three years back. Because the firm is constantly on the lookout for technical men who are earnestly in quest of management opportunities, Chartier ran a general ad aimed at chemists, chemical engineers, and mechanical and industrial engineers. It invited replies from presently employed technicians and engineers "who are interested in making contact with a progressive firm" where management opportunities might be awaiting.

This ad brought more than 200 replies from top men in those fields. Out of that group, Dominion hired seven men who seemed to have the ambitious attitude the company likes. All seven are still with the company, Chartier says; "each one has exceeded our fondest hopes, and each has taken on the type of management responsibility he was seeking."

Bull's-eye Via Wife: In some cases, Chartier uses display advertisements instead of classifieds to get word to certain specialists. One such ad, telling about a top technical billet with the company, was read by the wife of a qualified man, and she kept after her husband until he answered the ad.

But usually Chartier sticks to the classifieds, and he finds that they are read by droves of technical people. Most recent example: Last month, he advertised for a machine design engineer, using such phrases as "think about your future" and "a position with responsibility."

Although machine design engineers "don't exactly come in bushels," as Chartier says, "we had no less than 64 replies—mainly from well-employed types, college graduates with experience to boot, almost all between the ages of 25 and 35."

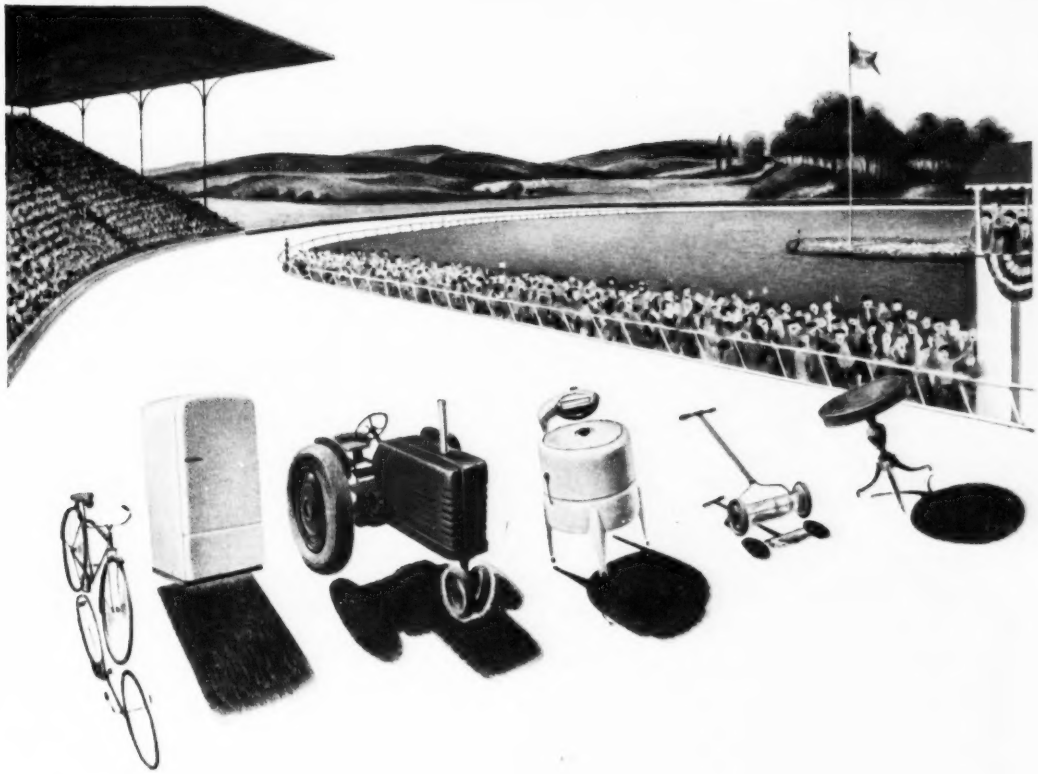
Seeing that there are only a limited number of skilled technicians on the personnel market these days, and because superior technical ability can be worth many thousands of dollars a year to a chemical processing company, many firms may find Chartier's method of latching onto top-flight men is well worth mimicking.

•

Libbey-Owens-Ford, with its finger in the fiber glass-reinforced plastic business via its Plaskon and Fiber Glass Divisions, now has acquired a new property to further this. L-O-F has acquired the Corrulux Corp. of Houston, Tex., maker of the reinforced plastic sheet. It will operate it as its Corrulux Division.

Addled Identity

Because of a mix-up in reporter's notes, the "Bridge Over Tariff Wall" article in last week's issue of CW contained, in the first few thousand copies printed, an incorrect listing of the principal product of Atlas Powder Co., Canada, Ltd. This company, with plant at Brantford, Ontario, is the affiliate of Atlas Powder Co., Wilmington, Del., a major manufacturer of chemicals and finishes.



Tight Finish

A finish compounded with Epon® resin sticks so tight that it's virtually part of the wood or metal it protects. This remarkable resin is made from epichlorohydrin, a petroleum chemical developed in recent years by Shell scientists.

Combining unusual adhesion and toughness, Epon resin finishes stand up under the rough duty given farm machines, tools and bicycles. Epon resin baked enamel finishes on household appliances last longer and cost less. An Epon resin varnish is so tough you can dent the wood beneath it without cracking the finish. Water, caustic cleansers, and most common acids have little effect.

Epon resin printing inks, a late development, make possible printed patterns on cotton or rayon as permanent as the cloth.

Production of Epon resins as a basic raw material for the coatings industry is but one example of Shell Chemical's partnership with industry and agriculture. Application of petroleum chemistry to your needs is our constant purpose.

Shell Chemical Corporation

Chemical Partner of Industry and Agriculture

From coal to color—

That's Basic!

TRY AND NAME a product that requires a higher degree of quality control than *dyestuffs!* They must meet color specifications right on the line, remain fast to light, laundering and wear, and apply uniformly to all types of fibers.

As a basic producer of coal chemicals, including important intermediates from which a great many dyes are made, we're in a position to provide this precise control and maintain the high quality and purity of Pittsburgh Dyestuffs *from coal to finished colors.*

This unique basic position—which offers definite advantages to buyers of Pittsburgh agricultural chemicals, plasticizers, protective coatings and the products of our other integrated divisions—will soon be helping the nation's textile industry to produce tomorrow's brighter and better materials.

FINE CHEMICALS DIVISION

PITTSBURGH
COKE & CHEMICAL CO.

Grant Building - Pittsburgh 19, Pa.

WAD 4380

COAL CHEMICALS • AGRICULTURAL CHEMICALS • FINE CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

Storm Signals Flying

More omens pointing toward more vigorous civic action on air pollution laws are making industrial executives think of smoke control devices as a harbor of smooth community relations in which to moor before the storm of odium reaches its peak.

This week's news is splotched with reports of how air pollution control is rising in importance as a political issue in city halls across the continent. In at least one instance, the topic is being pushed in the state capital.

Vote Appeal Seen: Mayor Joseph S. Clark of Philadelphia, whose city maintains an airplane patrol vigil to spot industrial plants that are emitting too much smoke or fumes, is asking Pennsylvania's State Legislature to authorize a state air pollution board with injunction powers. This is one of 14 legislative acts requested by Clark in a move that seems to point to air pollution as a subject of growing concern to the voters.

Across the nation at Tacoma, Wash., the City Council has declined to expand its smoke control program this year, but voted funds for continuation at the present level. The council turned down a proposal to hire an additional inspector and buy $6,000 worth of testing equipment when the director of the smoke and odor abatement program, chemical engineer John Rosene, affirmed that 80-85% of industrial plants there had been "cooperative."

New Smog Champ: Windsor, Ontario was shocked last week by a report that it is probably the grimiest city in Canada and even more sooty than Pittsburgh or Los Angeles. Incidence of sulfur dioxide gas is high and increasing, the investigators say, and "with increasing industrialization, toxic levels of pollution are being built up."

Billed as "the most eminent authority in the field of industrial pollution abatement," Robert A. Kehoe recently visited Houston, Tex., to discuss the subject with some 200 of the area's top industrial leaders. Kehoe is director of Kettering Laboratory, University of Cincinnati College of Medicine, which the Houston Chamber of Commerce has tentatively engaged to make a survey of the pollution problem along the Houston Ship Channel. Earlier this year, Kettering scientists conducted similar surveys in Baltimore and Donora, Pa.

Fight City Hall: A local rhubarb about smoke control erupted in Camden, N.J., with the Board of Education president accusing the Bureau of Smoke Control of "discriminatory enforcement." He says the Bureau has been pestering the school board about smoke from school chimneys while overlooking more flagrant violations at a forge plant, a ship yard, and even City Hall itself.

In Louisville, Ky., where residents have been clamoring for action against the National Carbide plant there, the city-county Air Pollution Control Commission has asked the Jefferson County Medical Society to appoint a committee of physicians to decide this question: Are the fumes from the plants in the city's Rubbertown district a menace to health, or only a nuisance? The finding may determine what legal steps will follow.

The increasing number of up-in-arms communities spells trouble for chemical processing plants found among the sinners. But it also spells increased business for another segment of the process fields—manufacturers of fume-control equipment whose sales efforts are being backed by public passion.

LABOR

Wages Ascending: While labor unions are proposing a 50¢ boost in the Federal minimum-wage law so that the new minimum rate would be $1.25/hour, pay rates in the chemical processing industries keep inching up to new high levels each month, with $1.73 as the latest average (August) computed by the Bureau of Labor Statistics. This figure compares with the industry's $1.63 average for 1951, $1.51 for 1950, and $1.23 for 1947.

•

No Uniformity: Another new BLS finding illustrates the irregular pay practices in the CPI. It shows that for various job classifications, wage rates are particularly high in two segments of the industry: (1) dyes, intermediates, color lakes and toners, and (2) alkalies and chlorine. Relatively low wage scales are reported in the manufacture of compressed and liquefied gases and of cyclic crudes. In dyes and intermediates plants, eight pay rates are above $2/hour: class A chemical operators, compressors, lead burners, class A stillmen, and maintenance carpenters, electricians, machinists and pipe-fitters.

•

Draft Data: Although military call-ups continue to complicate the technical manpower problem, latest Selective Service figures show that the chemical industry doesn't need to worry about a supply of hourly-paid workers. Out of the nation's total labor force of more than 59 million, about 2.3 million are in the armed forces now and 1.2 million are in draft classes I-A and I-A-O. Number of persons employed in chemical and allied industries climbed by a fraction of a percent in August to 744,000.

•

Retarded Contract: Among the company-union settlements in the news this week, special mention for lengthy negotiations goes to the Firestone contract accepted by a 1,835 to 546 vote of United Rubber Workers (CIO) members after four months of bargaining and hesitation. Employees were afraid the "discipline clause" could permit the company to fire workers arbitrarily, but URW President L. S. Buckmaster assured them that clause would be used only in case of "wildcat" strikes. The pact calls for a 10¢/hour wage increase and a union shop.

• After gaining WSB approval, Hercules Powder has paid approximately $1.5 million in back pay to some 8,700 employees at the Radford (Va.) Arsenal. Based on a contract with United Gas, Coke & Chemical Workers (CIO), the amount includes a general wage increase of 8½% and a cost-of-living allowance of 2%, retroactive to Oct. 1, 1951.

• Utilizing the wage re-opening clause in the current contract, District 50 of United Mine Workers gained a 5¢ general increase plus merit adjustments ranging from 5 to 10¢/hour for members at the Adamas Carbide plant in Harrison, N.J.

• Hammermill and the AFL Brotherhood of Paper Makers have allayed a dispute over doubletime Sunday work. The union had objected when the company curtailed Sunday work for 275 maintenance employees who previously had worked at least three Sundays a month. According to a union spokesman, the firm has agreed to revert to the former schedule.

•

Hatred Specified: Gas-Coke has spelled out two of its biggest dislikes about the Taft-Hartley law: the "free speech" provision, and the way the law "encourages the employer to resort to the courts." The union, second largest in the chemical industry, says its growth has been held back by companies' "propaganda and pressure tactics" under the free-speech clause; alleges that in "friendly approach letters," an employer frequently uses "innuendo or thinly veiled threat" to tell workers' wives that their husbands had better vote against the union. Gas-Coke says an employer "suffers

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ON CONTAINER AND SHIPPING COSTS

USE THE NEW

MENTE

Polyethylene Laminated Bag

Not a "liner-in-a-bag" but a sheet of tough polyethylene laminated firmly to either burlap or cotton. A perfect moisture-proof barrier for hygroscopics, a highly satisfactory (and inexpensive) bag for many chemicals now being shipped in heavy, space-consuming drums.

•

Mente SealPak Laminated Bags are also made with asphalt or polyvinyl resin lamination between *textile* and *paper*. We invite your inquiry.

Dept. CW

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very little" from legal costs, because they can be charged off against operating expenses. The union says its NLRB case against National Carbon (*CW, Sept. 20*), which was nearly three years in litigation, is typical of the way the law tempts companies to disregard "the bargaining table and the election box."

•

Unions in Court: Members of two CIO unions are affected by court proceedings in the news in the CPI this week.

• At Syracuse, N.Y., Onondaga Pottery is asking U.S. District Court for an injunction to keep the NLRB from holding another union vote among the firm's employees. The employees twice have voted not to give their bargaining rights to the CIO Glass Workers, but NLRB has set aside the results, contending that the company interfered in the elections.

• At Akron, Ohio, nine URW members will have to pay $250 fines and serve 10-day jail terms unless they can get the Ohio Supreme Court to bend an ear. They were sentenced for contempt of court last March, and last week the Court of Appeals upheld those sentences.

•

Freedom From Clocks: Feeling that people who have to look at clocks when they start and stop work may develop clock-watching habits throughout the day, Du Pont is experimenting with weekly time cards that free the workers from their old, twice-daily time-clock ritual. The new system is on trial at the plants in Louisville, Ky., and Deepwater, N.J.

•

Forty and Eight: In an article about chemical labor contracts (*CW, Aug. 2*) it was incorrectly stated that Dow offers time-and-one-half pay for hours worked beyond a 35-hour work-week. The current contract, which runs to next July 6, provides for time-and-one-half for work in excess of 8 hours per workday or 40 hours per work-week.

BENI PHOTOS

No Over-Expansion Fears

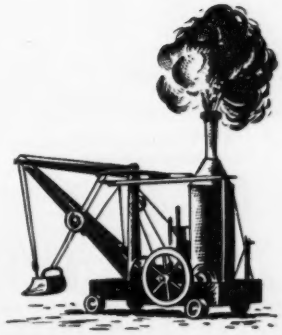
Continued expansion of America's chemical industry is necessary and sound, three of the nation's top chemical leaders* from industry and government told the country this week in a coast-to-coast radio broadcast.

The chemical industry in the U.S. now is ready for any national emergency, and is more competent than ever before to find alternate raw materials to replace those that might be cut off in an international crisis, according to George E. Holbrook, retiring director of the chemical division of the National Production Authority, sponsor of the 15-minute broadcast.

Dan M. Rugg, vice-president and general manager of Koppers' chemical division, holds that the chemical industry "now has met all requirements of the present defense program." And Robert C. Swain, vice-president of American Cyanamid, confidently predicts that "prophets who say our industry is over-extending itself were wrong in 1946 and will be proved wrong again."

* Clockwise around the table: Dr. Holbrook; Rugg; Harry Prentice, producer of the NPA's weekly broadcast; Jack Logan, moderator; and Dr. Swain.

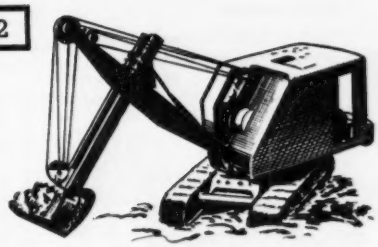
- **SODIUM BICHROMATE**
- **SODIUM CHROMATE**
- **POTASSIUM BICHROMATE**
- **SODIUM SULPHATE**



1909

over 40 years of progress in chemicals

1952



Natural

BICHROMATES

CHROMIUM PRODUCTS

NATURAL PRODUCTS REFINING CO. • JERSEY CITY 5, N. J.

NP 118

NEW

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PETROLITE 180

A low-cost, high melting-point, high-softening point, plastic microcrystalline wax with excellent antiblock characteristics up to 110°F.

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has these outstanding advantages

1. ECONOMY
2. PURITY
3. UNIFORMITY
4. ODORLESS
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6. HIGH MELTING-POINT
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PETROLITE 180

is already being used extensively as an additive in paper coatings incorporating paraffin wax blends containing polyethylene.

SPECIFICATIONS

ASTM or Petrolatum mp . 180°F min.
Cone penetration . 14 max. @ 110°F
Needle penetration . 13-15 @ 77°F
Color NPA . . . . . 2½ max.

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PETROLITE 180

Samples and complete information available on request.

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WAX DIVISION
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P. O. Box 390, Kilgore, Texas
Petrolite Waxes are available FOB Jersey City, Chicago, Kilgore and Los Angeles

PW-53- 4-180

Mighty Index

Ninety days wasn't enough time for Du Pont and Imperial Chemical Industries to compile lists of all their old and new patents*, but the two chemical giants have managed to enumerate all their "common chemical products".

This list, filed in U. S. District Court in New York last week in accordance with the final judgment in the Government's anti-trust suit (*CW Newsletter, Aug. 9*), will be one of the documents on which licensing and cross-licensing of Du Pont and ICI patents will be based. Judge Sylvester Ryan has given the two companies a two-month extension on the deadline for filing the two patent lists.

Tagged with the legalistic label of "Schedule E," the list of common chemical products requires 48 pages, and contains some 1,189 items. Schedule E runs the chemical catalog gamut from "acetaldehyde" to "zinc sulfate," and includes numerous catalysts, cements and adhesives, detergents, dyestuffs and intermediates, dynamites, coated fabrics, pigments and coloring matters, and polymer products like nylon and polyethylene. These are the products that were being made on or before June 30, 1950, by both Du Pont and ICI, or by either of them and any of their jointly-owned companies, like Canadian Industries, Ltd.

Here's the "why" of the list:

When a company applies to Du Pont, for example, for a license to make some product under a Du Pont patent, Du Pont may, as a condition to granting that license, require the applicant to cross-license Du Pont under any and all patents owned by the applicant that were issued on or before June 30, 1950, and which cover in whole or in part any of the Schedule E products covered in whole or in part by the Du Pont patent under which the license was applied for.

Nitrate at the Bar

Fertilizer-grade ammonium nitrate, or FGAN as the trade calls it, will be the subject of U.S. Supreme Court deliberations this winter in the final phase of litigation over the Texas City explosion of April, 1947.

Whether FGAN is chemically stable or unstable seems to be one of the two major points on which the high court's ultimate decision may hinge. Scientific testimony on the nature of the substance will be presented for both sides, the approximately 8,500 individuals and companies who are asking for damage payments and the Federal Government, which will have to pay those claims if they're granted by the court.

The claimants are relying on the District Court decision of April, 1950, in which FGAN was held to be a dangerous explosive calling for much more care in handling and shipping than the Government had required.

Last week, the Government filed its brief, asking the Supreme Court to uphold the Appeals Court's finding that FGAN is not "inherently" dangerous. The Government also argues that the plaintiffs have not specified which Government agents are accused of negligence, or the particular acts of negligence that are alleged.

* Du Pont's research program alone, which last year was a $47 million investment, has yielded patents at a rate of more than one per day in recent years; e.g., 390 during 1950.

LEGAL . . . . . .

Potent Polonium: FTC has ordered Nuclear Products Co., Costa Mesa, Calif., to make clear in labels and advertisements that the polonium in its Static-Master brushes is dangerous to health if inhaled or ingested. The brushes, designed for removing static electricity and dust from photographic film and other materials, formerly were billed as harmless.

•

Children in Court: Four Chicago attorneys have been appointed "guardians ad litem" for the 59 minors who, along with 59 adults and six corporations, are defendants in the Government's anti-trust suit against Du Pont, General Motors and U.S. Rubber (*CW Newsletter, Nov. 1*). Trial is to begin Nov. 18. Among the family names of these children who have inherited share holdings in the companies concerned: Du Pont, Carpenter, Copeland, Flint, Faulkner, Greenewalt, Kitchell and Silliman.

•

New Oil Charge: More litigation is in store for one of the nation's major oil companies, which are now defending themselves against accusations of (a) operating an international carfel, and (b) over-charging the Government on oil shipments to countries receiving U.S. aid. The Federal Trade Commission has filed a complaint against Shell Oil, alleging restraint of trade by requiring dealers to handle only Shell kerosene and fuel oils.

•

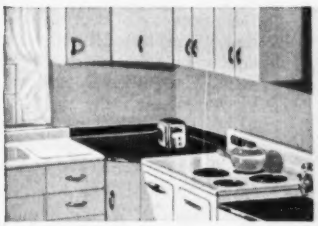
Puny Patents: Although denying the charge by certain American drug houses that present Italian patent laws permit unauthorized use of pharmaceutical formulas by Italian manufacturers, the Italian Ministry of Industry

Even in paints LATEX means RUBBER

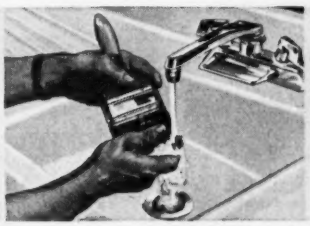
—and it gives you these advantages:

SHEDS WATER—latex paints have withstood more than one million soap-and-water scrubbings!

TAKES ROUGH TREATMENT—latex paints withstand scratches, abrasion, marring and washing.



RESISTS STAINS, GREASE, CHEMICALS—latex paints have built-in resistance to ordinary paint-staining materials because they're made with rubber.



ODOR FREE—NONFLAMMABLE—latex paints contain no solvents. Brushes can be easily cleaned with water.

EASY TO APPLY—latex paints apply rapidly with the greatest of ease—dry quickly with no lap or brush marks.

With today's ultra-modern latex paints, you get all these advantages. The paint acts like rubber—protects like rubber—because it's made from the same products used to make synthetic rubber. And first choice of paint manufacturers everywhere is PLIOLITE 160 latex—another product of Goodyear, "The Greatest Name in Rubber." Write for details to:

Goodyear, Chemical Division, Dept. F-3, Akron 16, Ohio

CHEMICAL GOODYEAR DIVISION

Chemigum, Pliobond, Pliolite, Pliovic—T.M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

Use Proved Products—CHEMIGUM • PLIOBOND • PLIOLITE • PLIOVIC • WING-CHEMICALS—The Finest Chemicals for Industry

PETRONATE* (Oil Soluble)
PYRONATE* (Water Soluble)
HYPONATE* (Oil Free)

PETROLEUM SULFONATES

. . . made to your specifications for use in products such as . . .

- rust preventive formulations
- soluble cutting oils
- soluble textile oils
- emulsion degreasing compounds
- fuel oil additives
- emulsifiers for agricultural and insecticide sprays
- special emulsifying formulations

Ask Sonneborn about PETRONATE, the oil soluble petroleum sulfonate available in various molecular weights; HYPONATE, an oil free petroleum sulfonate; and PYRONATE, a water soluble petroleum sulfonate effective as an emulsion breaking reagent.

Sonneborn petroleum sulfonates—superior in quality and possessing exceptional uniformity—are now made to fit a wide variety of specific needs. They can also be tailor-made to your exact specifications. You can rely on prompt shipment.

*Reg. U. S. Pat. Off.

Free Informative Booklet

This valuable booklet gives highly useful data on the many ways PETROLEUM SULFONATES are being and can be used. Write today for this highly informative booklet.

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RESEARCH

and Commerce will ask Parliament for a new law giving "limited protection" to manufacturers of medicinal products. Carlo de Angeli, president of the drug manufacturers' section of the Italian Chemical Industry Association, says medicine patent policy should be based on the public's interest in securing an adequate supply of the products.

•

Fair Trade Trials: Both of the big "fair-trade" lawsuits involving drug manufacturers and distributors are set for trial. In New Orleans, the suit of Eli Lilly & Co. vs. Schwegmann Bros. has been postponed to this week; and in New York, the Government's suit against McKesson & Robbins has been assigned a number on the court calendar, but may not be tried before next July. Lilly has gained a temporary victory in the Louisiana case; the U. S. District Court has ordered Schwegmann not to advertise or sell Lilly products at less than fair-trade prices until the case is decided. Meanwhile, Schwegmann continues to offer other drug products at 20-30% less than fair-trade prices.

•

Time Running Out: Unexcelled Chemical Corp. of Jersey City, N.J., will have a chance to argue before the U.S. Supreme Court its contention that it's protected by the statute of limitations on a suit by the Government. The Justice Department is trying to establish the right to collect $15,600 as liquidated damages for alleged violation of child labor provisions of the Walsh-Healy Act during World War II.

Another Black Eye

Manufacturers of chlorophyll and chlorophyll-containing products this week are still trying to assess the effects of the American Dental Association's blast at "misleading" advertisements for Lever Bros.' Chlorodent toothpaste, based on research at Boy's Town (CW Newsletter, Nov. 8).

It's almost certain that the big, flamboyant ad has been read by more people than the ADA's cautious, meticulous statement. On the other hand, the message criticizing the ad has gone to nearly every dentist in the nation (ADA claims a membership of some 78,000 dentists), and they can be counted on to relay that information to all their patients who ask about Chlorodent.

Pleads 'Not Guilty': Lever's Pepsodent Division, which makes the verdant dentifrice, hasn't made a detailed reply to the dental group's statement,

Where industry has the "need" Oronite Chemicals supply the way

ORONITE CHEMICAL COMPANY
THE NAME TO WATCH IN CHEMICALS

ORONITE was the pioneer in the development of a chemical called "Polybutenes." Today, industry looks to Oronite as a major source of this very versatile chemical.

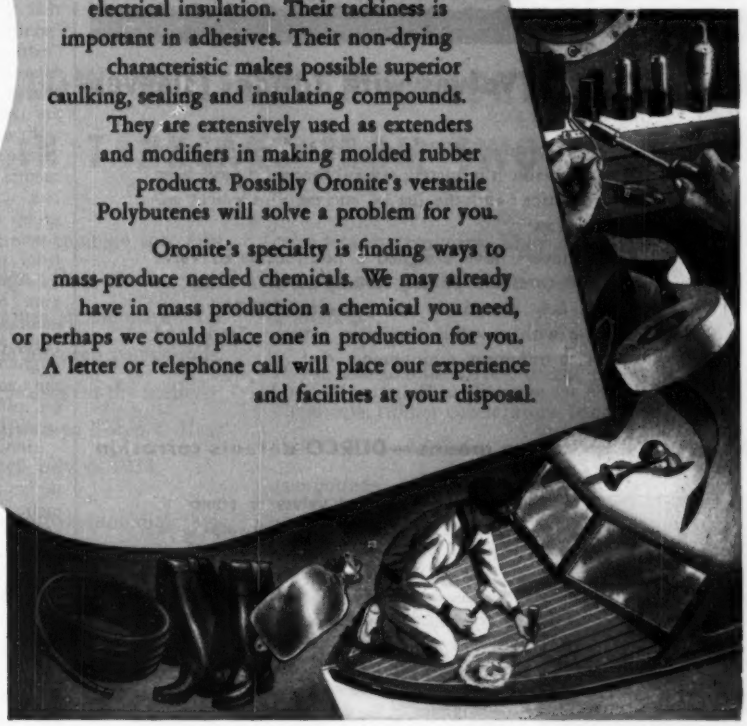
The high dielectric strength of Oronite Polybutenes makes them useful in electrical insulation. Their tackiness is important in adhesives. Their non-drying characteristic makes possible superior caulking, sealing and insulating compounds. They are extensively used as extenders and modifiers in making molded rubber products. Possibly Oronite's versatile Polybutenes will solve a problem for you.

Oronite's specialty is finding ways to mass-produce needed chemicals. We may already have in mass production a chemical you need, or perhaps we could place one in production for you. A letter or telephone call will place our experience and facilities at your disposal.

Most ORONITE PRODUCTS *are available now— some are in short supply* **Please inquire!**

A partial list of ORONITE PRODUCTS

Detergent Alkane
Detergent Slurry
Detergent D-40
Detergent D-60
Wetting Agents
Lubricating Oil Additives
Cresylic Acids
Gas Odorants
Sodium Sulfonates
Purified Sulfonate
Naphthenic Acids
Phthalic Anhydride
Ortho-Xylene
Para-Xylene
Xylol
Aliphatic Acid
Hydroformer Catalyst
Polybutenes

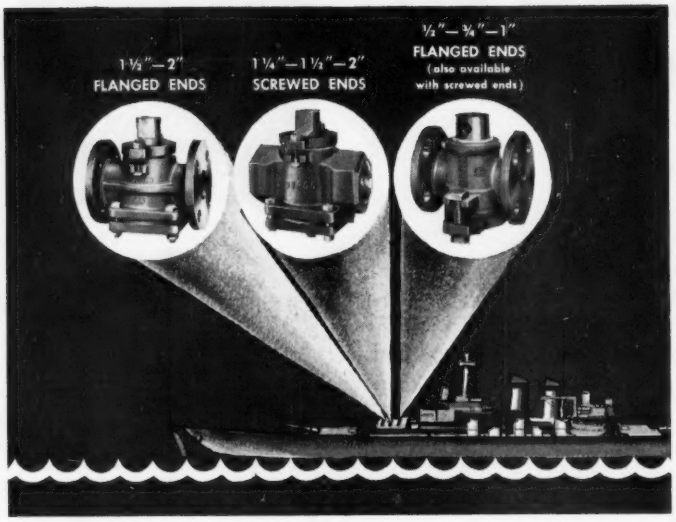


ORONITE CHEMICAL COMPANY

38 SANSOME ST., SAN FRANCISCO 4, CALIF. STANDARD OIL BLDG., LOS ANGELES 15, CALIF.
30 ROCKEFELLER PLAZA, NEW YORK 20, N.Y. 600 S. MICHIGAN AVENUE, CHICAGO 5, ILL.
MERCANTILE SECURITIES BLDG., DALLAS 1, TEXAS

2349

The Chemical Industry's best defense against corrosion



DURCO Type F Valves with Teflon®* sleeves

In the two years since DURCO Type F Valves were introduced to the chemical industry, several thousand have been put into operation, and the list of successful applications continues to grow.

DURCO engineers have designed a non-lubricated valve with no metal-to-metal contact, making use of a Teflon®* sleeve. This new design, in the correct DURCO alloy, provides you with a valve *proven* in actual service, and operating with minimum maintenance cost.

Full details are available in Bulletins V/4 and V/4a.

40 years' experience means—DURCO *defeats corrosion*

Whether you need valves or pumps to handle corrosive liquids, or piping or other corrosion resisting equipment, a nearby DURCO representative is waiting to show you the products of 40 years' experience serving the chemical industry. *Concentration* on corrosion has made DURCO the largest exclusive manufacturer of engineered corrosion resisting equipment in the world.

THE DURIRON COMPANY, Inc., Dayton, Ohio

DURCO
CORROSION RESISTING ALLOYS & EQUIPMENT

**Registered trademark of E. I. duPont de Nemours & Co., Inc., for its tetrafluoroethylene resin.*

. . . . . .

but it does deny that it has any deliberate guilt in the matter.

The two major points in the statement made jointly by Dr. Thomas J. Hill, Cleveland, chairman of ADA's Council on Dental Therapeutics, and Dr. Maynard K. Hine, Indianapolis, chairman of ADA's Council on Research:

- The Chlorodent advertisements appeared in newspapers before results of the Boys Town study were published in *Journal of Periodontology*, and dentists therefore weren't ready to answer inquiries.
- Claims made in the Chlorodent ads were "not in conformity with the careful and moderate statements in the manuscript."

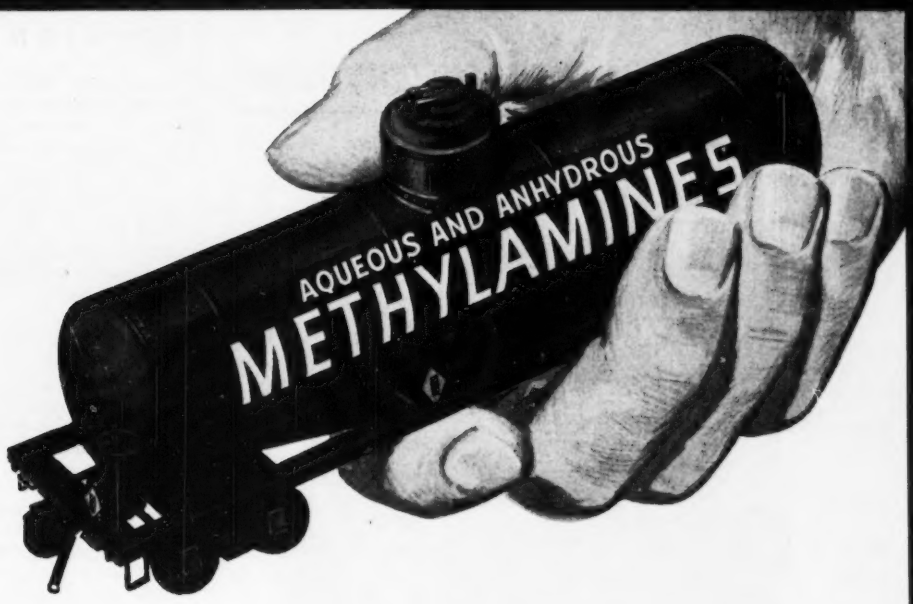
Pepsodent contends that its ads were planned to appear on the same day that the Boys Town report was scheduled to be published in the Journal, and that "we consider the text of the advertisement to be a faithful account of the survey."

Stark Indictment: Besides saying that the ad was "overly optimistic," "contrary to the public interest" and "extremely unfortunate," Hill and Hine go into an itemized critique of the ad, as compared to the researchers' report.

In essence, these were the findings of the Boys Town survey: For nine months, 201 boys brushed their teeth only with Chlorodent while a similar group used only "a fine white toothpaste." Many of these boys had come from under-privileged families, and 92% had gingivitis (inflammation of gum tissues). At the end of two months, 158 boys in the Chlorodent group and 76 in the test group showed improvement in oral health; but at the end of nine months, boys in both groups had benefited to about the same degree.

Here's how the Chlorodent ad tells it: "In just two months, 78.6% of the boys using Chlorodent showed dramatic improvement in mouth health. Overall, these tests proved Chlorodent to be twice as effective for quickly reducing gingivitis."

ADA fears that the ads may "mislead the consumer" into the belief that professional dental attention won't be needed if one uses Chlorodent. Other critics say the ads are so contrived as to make readers think the product's other claims ("destroys mouth odors, fights tooth decay, keeps teeth cleanest") were proved in the Boys Town study. What the country's dentists tell their patients may add to the apathy, or worse, with which many people are coming to view advertisements of products containing chlorophyll.



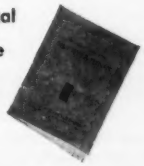
LOW COST, LOW MOLECULAR WEIGHT AMINES AVAILABLE IN TANKCARS FROM TWO PLANTS

Because the methylamines combine low cost with low molecular weight, they are the most economical aliphatic amines on the market for the synthesis of organic nitrogen compounds. For this reason the list of uses for the methylamines has grown steadily since Rohm & Haas introduced them commercially in 1934.

All three amines—monomethylamine, dimethylamine, and trimethylamine—are shipped in both aqueous and anhydrous form, in drums, cylinders, or tankcars. They are produced at two different plants, assuring their continuing availability.

If you manufacture dyes, drugs, photographic chemicals, rubber accelerators, fungicides, bactericides, weed killers, quaternary ammonium compounds, or other organic nitrogen compounds, the Rohm & Haas methylamines should be considered as readily available, low-cost raw materials.

For complete data on the physical properties of the methylamines, write for this 39-page booklet.



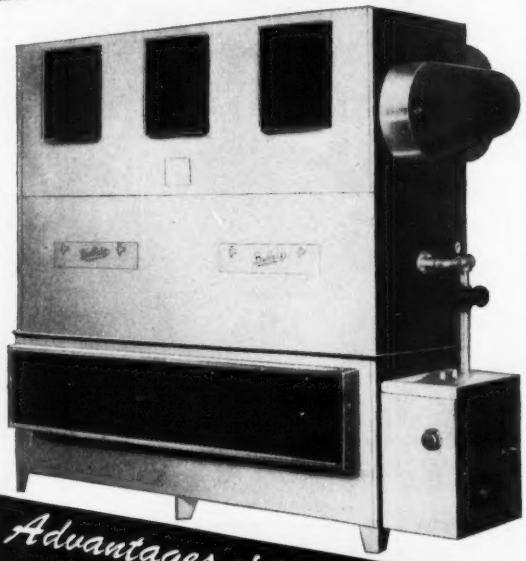
CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

"Buffalo" Tips on Better AIR CONDITIONING



"Buffalo" Evaporative Water Coolers

Advantages of COOLING LIQUIDS by Evaporation of Spray on Coils

1. EFFICIENCY—fine spray evaporating on spiral fin coils gives efficient cooling action.
2. GOOD CAPACITY RANGE—"Buffalo" EWC sizes range from 20 to 600 gpm of cooled liquid.
3. COMPACT SIZE—easily moved into buildings, installed near related equipment. Indoor or outdoor installation.
4. EASY OPERATION—"Buffalo" Evaporative Water Coolers require little attention—may be equipped with automatic damper controls.
5. SIMPLE MAINTENANCE—spray on coils keeps them clean. Quality "Buffalo" Pumps, Fans and non-clogging spray nozzles in these EWC units are trouble-free essential parts.
6. WRITE for further facts on liquid cooling for air conditioning. "Buffalo" Evaporative Water Coolers and Evaporative Condensers are widely used in the chemical industries.

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75th ANNIVERSARY

FORCED DRAFT PRESSURE BLOWING HEATING COOLING

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING

FOREIGN . . . . .

Saran/Japan: Production of saran monofilaments in Japan is expected to begin in a few months as a result of the formation of a new company, Asahi-Dow Ltd., owned jointly by Dow Chemical International Ltd., and the Asahi Chemical Industry Co. Ltd. The saran molding powder is to be produced at Nobeoka on Kyushu Island, the filaments at Suzuka City, on Honshu. Main market: fish nets.

•

Pennsalt/Brazil: Pennsalt International Corp. and the Brazilian Industria Quimica do Brasil have joined 50-50 in a new company, Pennsalt Industrias Quimicas do Brasil, to market insecticides and related chemical products.

•

Carborundum: Even more international flavor will be added to Carborundum Company's business if negotiations now in progress are successful. Carborundum and a British concern are attempting to acquire a South African subsidiary. Brazil, too, is a cynosure of Carborundum's eye for its future operations.

•

Rubber/West Germany: The Buna rubber production at the Huels plant is soon to be changed. Two new types, said to offer processing advantages, are to be manufactured.

KEY CHANGES . .

Donald F. Murphy: To vice-president, Rohm & Haas, Philadelphia, Pa.

J. Fred Corkill: To vice-president and eastern manager, Pacific Coast Borax Co., New York, N.Y.

Robert A. Stauffer: To vice-president, National Research Corp., Cambridge, Mass.

A. B. Tillman: To general superintendent, alkali division, Diamond Alkali Co., Cleveland, O.

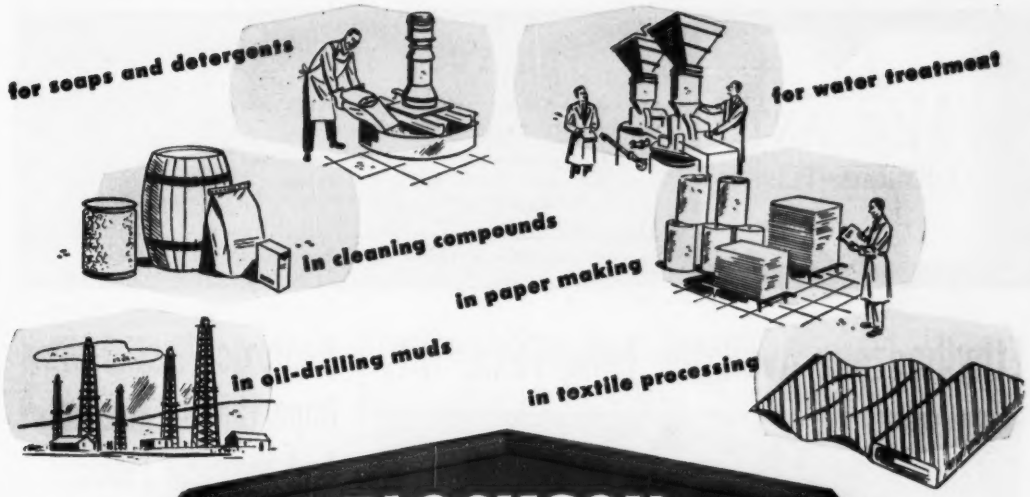
R. L. Hockley: To president, Davison Chemical Co., Baltimore, Md.

Fred B. Loeffler: To vice-president, American Mineral Spirits Co., New York, N.Y.

W. Wayne Albright: To president, National Lubricating Grease Institute, Chicago, Ill.

J. H. Frankfort: To chief project engineer, Walter Kidde Nuclear Laboratories, New York, N.Y.

George W. Moyers: To vice-president, phosphate division, International Minerals & Chemical Corp., Chicago, Ill.



BLOCKSON
Sodium Phosphates

As leading primary producers of Sodium Phosphates, Blockson has made substantial plant additions in its endeavors to keep up with the increasing Sodium Phosphate demands of American industry.

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JOLIET, ILLINOIS

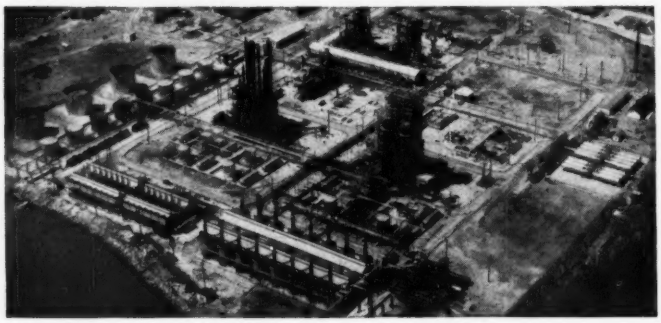
Blockson Plant . . . Joliet, Ill.

- Sodium Tripolyphosphate
- Tetrasodium Pyrophosphate, Anhydrous
- Sodium Polyphos (Sodium Hexametaphosphate) (Sodium Tetraphosphate)
- Trisodium Phosphate, Crystalline
- Chlorinated Trisodium Phosphate
- Trisodium Phosphate, Monohydrate
- Disodium Phosphate, Anhydrous
- Disodium Phosphate, Crystalline
- Monosodium Phosphate, Anhydrous
- Monosodium Phosphate, Monohydrate
- Sodium Acid Pyrophosphate
- Sodium Silicofluoride
- Sodium Fluoride
- Hygrade Fertilizer

BLOCKSON

MONSANTO
CHEMICALS — PLASTICS

Ethylbenzene Available from Texas City



1 From this modern plant comes Monsanto ethylbenzene in tank car, truckload and drum-size quantities. Increased capacity now makes this low-cost, reactable compound available for large-scale chemical processing.

As a solvent, Monsanto ethylbenzene is supplied at minimum 99% purity. Boiling point is in the xylene range: 136°C. (227°F.).

As a gasoline blender, Monsanto ethylbenzene increases aromatic content, raises octane number.

As the starting point Monsanto ethylbenzene aids in production of chlorostyrenes, intermediates, dyestuffs, pharmaceuticals. Here are just a few of the organic compounds that can be derived practically from Monsanto ethylbenzene.

5-*m*-Dioxanyl phenyl ketone
alpha, *alpha*-Bis (chloromethyl) acetophenone
2-Benzoyl-1, 3-propanediol diacetate
Acetophenone
alpha-Chloroacetophenone
alpha, *alpha'*-Dimethylhydrobenzoin
alpha-Methylbenzyl alcohol
o-Chlorobenzoic acid
p-Chlorobenzoic acid
o-Aminobenzoic acid
p-Aminobenzoic acid
1-Chloro-2-ethylbenzene
1-Chloro-4-ethylbenzene
1-Chloro-4(2)-(1-chloroethyl) benzene
p-Chloroacetophenone
p-Chloro-*alpha*-methylbenzyl alcohol
o(*p*)-Chlorostyrene
p-Chlorostyrene
8-Ethylquinoline
6-Ethylquinoline
p-Nitrostyrene
o-Ethylaniline
p-Ethylaniline
alpha-Methyl-*p*-nitrobenzyl alcohol
o-Ethylnitrobenzene
p-Ethylnitrobenzene
o-Nitroacetophenone
p-Nitroacetophenone
o-Nitrobenzoic acid
p-Nitrobenzoic acid
o-Aminoacetophenone
o-Amino-*alpha*-methylbenzyl alcohol
p-Ethylacetophenone
p-Ethylbenzoic acid
Methyl *p*-ethylbenzoate
Methyl *p*-acetylbenzoate
Methyl *p*-(1-hydroxyethyl) benzoate
Methyl *p*-vinylbenzoate
p-Ethylphenyl thiolacetate
p-Ethylbenzenesulfonyl chloride
p-Ethylbenzenethiol
p-Ethylbenzenesulfonic acid
p-Ethylphenol
p-Ethylphenyl acetate
p-Acetylphenyl acetate
p-(1-Hydroxyethyl)phenyl acetate
p-Vinylphenyl acetate
Ethyl *p*-ethylbenzyl ether
p-Ethylbenzyl chloride
p-Ethylbenzyl acetate
p-Acetylbenzyl acetate
p-(1-Hydroxyethyl)benzyl acetate
alpha^1-Methyl-*alpha*^{1}, *alpha*^{4}-*p*-xylenediol diacetate
p-Vinylbenzyl acetate
p-Vinylbenzyl alcohol

Nontoxic Plasticizers Important in Medical And Surgical Fields

2 When blood or blood plasma is being administered to a patient, it flows through a small, unimportant-looking piece of tubing. However, army medics rightly call that tubing the "life line." It must meet the severest kind of requirements . . . be completely nontoxic as well as absolutely sterile.

In the production of such tubing, Monsanto plasticizers play a vital part. Santicizers* B-16, E-15 and 141 make possible the processing of such articles and impart softness, flexibility and chemical resistance.

Other important applications of nontoxic plasticizers in surgery include their use in the formulation of vinyl chloride for sponge material required in lung-collapsing operations.

These plasticizers are also used in the manufacture of hospital sheeting, prosthetic devices, gum dentures and similar products. Perhaps the special characteristics of Monsanto plasticizers can help you. Why not use the coupon for more information?

Monsanto Penta Available In New Dustless Form

3 A new dustless form of pentachlorophenol, just announced by Monsanto, makes this widely-used wood preservative easier to handle. In addition, it dissolves more rapidly in petroleum oils. The regular dry-crystal form of Monsanto Penta still is available for those who prefer it.

The new Monsanto Penta has the same excellent wood-preserving qualities as the dry crystals. It will add years of life to wood by repelling termites and preventing decay. It can be formulated so that treated wood remains clean and paintable.

For information on the use of Monsanto Penta, contact the nearest Monsanto Sales Office or mail the coupon.

Quick Facts About HB-40 Plasticizer

4 In the plastics field HB-40 can be used with polystyrene, vinyl resins, ethylcellulose and asphaltic compounds. It also acts as a "softener" or swelling agent for rubber-type compounds.

HB-40 imparts good tensile strength, nonmigration, and good moisture-resistant qualities to these plastics. It also has excellent electrical properties. All of these properties indicate a wide number of possible applications.

HB-40 has proved excellent for use in casting resins, vinyl plastisols, vinyl calendered film, profile extrusions and wire coatings. For complete information send in the coupon and receive your copy of our Technical Bulletin No. P-104.

Need Some 6-Ethoxy-1, 2-Dihydro-2,2, 4-Trimethylquinoline?

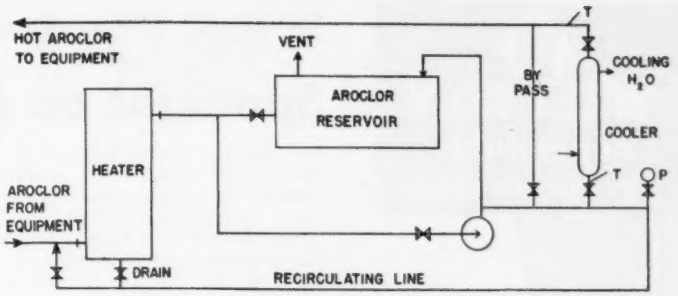
5 The answer to the headline is "yes" if you are in the rubber manufacturing business. This compound, called Santoflex* AW, is an effective means of reducing the attack of ozone on rubber.

Ozone, of course, is a highly active form of oxygen. Thus, even in small concentrations, it deteriorates rubber very quickly.

Santoflex AW reduces the attack of ozone and is particularly effective under dynamic conditions.

Santoflex AW is also a good antioxidant for the prevention of the usual deterioration on aging.

Santoflex AW, however, is only one of a wide line of rubber chemicals produced by Monsanto. Others include various types of accelerators and numerous special products. For complete information, use the coupon.



Flow diagram of portable heater.

Aroclor 1248 as Heat-Transfer Medium Demonstrates Excellent Characteristics

6 Aroclor* 1248 is a nonflammable, liquid-phase, heat-transfer fluid, designed for operation at atmospheric temperature at maximum temperatures of 300° C.

Outstanding performance characteristics of Aroclor 1248 were recently demonstrated when it was used in a unit designed for pilot operations to reach temperatures not attained by ordinary steam pressures.

The basic factors of the design are as follows:

1. Operating temperature 300°C. maximum.
2. Capacity: approximately 40,000 B.t.u. per hour based on vaporizing about 200 pounds per hour of organic material having a heat vaporization of 150 B.t.u. per pound. Heat loss allowance: 30%.

Since it is frequently unsafe to make use of direct gas firing or inconvenient to use electrical strip heating, a different approach was developed.

A portable electric heater was devised using Aroclor as the heat-transfer medium. Aroclor, consisting of chlorinated biphenyl and polyphenyls, has several advantages. Extensive testing has shown it capable of meeting these requirements:

Freedom from fire hazard.

Viscosities sufficient to permit pumping at room temperatures.

Boiling point sufficiently above 300°C. to assure liquid condition at all times.

Stability against heat, plus enough safety factor to accommodate accidental overheating.

Controllable vaporization losses.

Freedom from corrosive action against valves, piping, tank, jackets, made of cast iron and steels, bronze and stainless steel.

Freedom from toxicity hazard in properly enclosed system.

With a heat-transfer medium that could meet all these requirements—Aroclor 1248—a unit was built with the following elements (see flow diagram): A reservoir for the chlorinated Aroclor; a circulating pump and electric oil-immersion heater; a water-jacketed cooler; instrumentation to provide control of circulating fluid temperature; and pipelines from heating unit to and from equipment to be heated.

• • • • • • • •

MONSANTO CHEMICAL COMPANY, 1700 South Second Street, St. Louis 4, Missouri. District Sales Offices: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle, Twin Cities. In Canada, Monsanto Canada Limited, Montreal.

*Reg. U. S. Pat. Off.

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Technical Bulletins ☐ No. P-104, "HB-40"; ☐ No. P-130, "An Indirect Aroclor Heater for Unit Chemical Operations." ☐ Booklet, "Monsanto Chemicals for the Rubber Industry." ☐ Technical Data Report, TX12, subject: ethylbenzene.

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Combined protection, comfort and appearance make Willson safety spectacles outstanding in value. Choose from a full range of metal and plastic frames—fitted with Super-Tough* heat-treated glass lenses, or Plas-Tough* plastic lenses—every one tested for impact resistance and optical quality. Send for catalog describing our complete line of safety equipment.

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METAL FRAME Latest style spectacle with single bridge. Have Hi-Line temples with a "dressy" look. Also available with sideshields. (Non-flammable plastic frame Style WKS shown at top.)

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135 Thorn St., Reading, Pennsylvania

RESEARCH . . . .

Spotlight on Directors

How does Mr. Average Research Director in the chemical and process industries shape up in terms of education, responsibility, income, etc.? To find out, Chemical Week surveyed a broad cross-section of industrial research directors, asked for anonymous replies to several salient questions designed to give a bird's eye view of the average research director, an insight into his problems and how he feels about his niche in society. The average was not ascertained, would probably be meaningless in such a broad and diversified group.

But here are some revealing facts that sketch research directors in small, medium and large companies in different parts of the country:

*Education

More than two-thirds of all research directors queried held a Ph.D.; approximately 20% were holders of M.S. degrees; and less than 8% cited a B.S. or engineering degree as their highest academic award. Ph.D.'s were not limited exclusively to any one company size group. But they were concentrated in companies with substantial research staffs. Most had more than 20 technical people under their direction; a relatively small fraction supervised less than ten researchers; and only a handful of replies showed a Ph.D.-research director in companies employing only one or two technical staffers.

Holders of M.S. degrees appear to be rather evenly distributed among companies of varying size. As many directed research in companies employing less than five technical people as did in companies with 51 to 100 researchers. But in no case was an M.S.-research director in charge of a staff of more than 100. Surprisingly enough, this was not the case for holders of B.S. and basic engineering degrees. Although the majority of this group appear to be concentrated among companies having less than 50 researchers, one chemical engineer surveyed headed a research staff of more than 100.

*Experience

Approximately 25% of all research directors queried boasted more than 15 years' experience in that capacity, though not necessarily with the same firm; about 15% had 10 to 15 years' experience; nearly 31% had 6 to 10 years' experience; 17% had 3 to 6 years' experience; and, roughly, 12% had the job for less than 3 years.

Length of experience was not clearly related to size of company. On the whole, however, men with more than ten years as research directors tended to turn up in large companies (those with rather substantial research staffs and budgets). But, oddly enough, the research directors of the three companies with the largest research staffs and budgets were in the 6 to 10-year group.

Correlating experience with education mirrors the increase in educational requirements for industrial research that has taken place in the past several decades. Most B.S.-research directors surveyed had more than 15 years' experience in that capacity; the new research directors (less than 3 years on the job) invariably were Ph.D.'s.

*Budget

Within broad limits, rather good agreement was evident between the amount of money allotted (for the current fiscal year) to research and the size of the staff supervised by research directors of the companies canvassed. Firms employing less than 10 researchers generally fell into the $10,000-to-$50,000 category. A staff of 11 to 20 tied in with a budget of $50,000 to $100,000, with the top reported figure for this group in the $100,000-to-$500,000 level. Research directors with forces of 21 to 30 people had, without exception, budgets of $100,000 to $500,000; also included in this category were most organizations with 31 to 50 researchers and even one with a staff of 51 to 100.

But in general 51 to 100 technically trained staffers put the research budget into the $1 million class; more probably, into the $2 million-to-$5 million class. Solid in the latter financial group were the 101-to-200-researcher firms. The first breakthrough into the more-than-$5 million budget level came with companies having research staffs of 301 to 400; firms supporting more than 400 researchers were safely in the $5 million-plus category.

*Income

As expected, research directors' incomes increase in direct proportion to their research budgets. But age, education, experience all are complicating factors.

Stokes is FIRST in vacuum

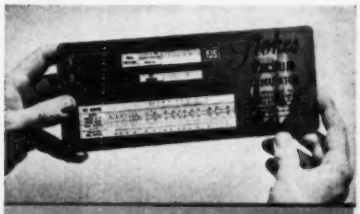
For many manufacturers in the high vacuum field the gap between the laboratory and the successful process has been a costly step . . . wasteful of time and money.

To vacuum engineering problems Stokes brings a wealth of experience in the design and manufacture, the installation and operation, of practical high vacuum equipment.

Stokes is the only manufacturer to design and make every element of its high vacuum equipment. Integrated design, centralized manufacturing responsibility and unparalleled experience are the unique extra value in Stokes High Vacuum equipment.

Stokes Vacuum Engineering steers a practical course through such design considerations as fluid flow, the effect of temperature and vacuum on structural elements, the selection of condensing surfaces, the introduction of mechanical motions to the vacuum chamber, and the operation of electrical equipment under high vacuum. The skilled application of these and other design factors is necessary for the successful use of high vacuum in metal coating and emission equipment, and in the production of zirconium, hafnium, titanium, magnesium and many other products.

Send for new Vacuum Calculator for rapid slide-rule calculations. Includes standard ABCD log scale. Also send for catalog 700, "Stokes Microvac Pumps for High Vacuum" with copious reference material.



Stokes vacuum equipment includes Microvac pumps, diffusion pumps, booster pumps, vacuum gages, vacuum furnaces, and equipment for vacuum drying, vacuum freeze-drying, vacuum impregnation, vacuum evaporation and vacuum distillation.

STOKES

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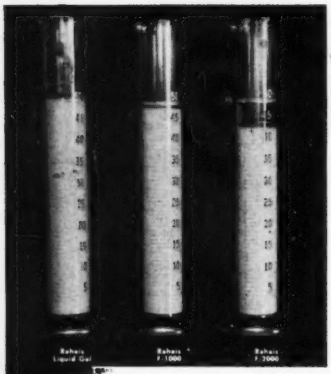

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FINE REHEIS CHEMICALS

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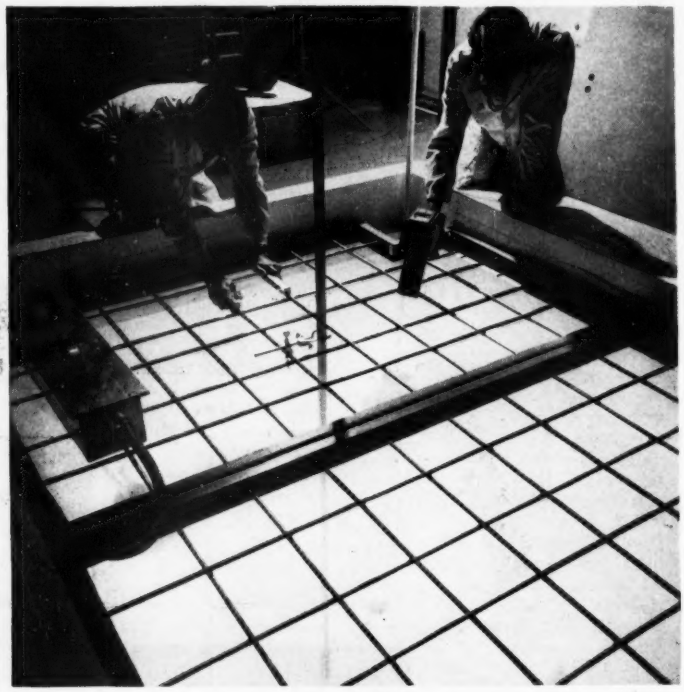
A small but not insignificant fraction of research directors surveyed reported salaries of less than $10,000 for the current fiscal year. With only one exception this group was employed by companies having research budgets of less than $50,000 for the period. Those reporting salaries of $10,000 to $15,000 come from firms with research budgets in the $50,000-to-$100,000 and the $100,000-to-$500,000 groups. A noteworthy departure from this general scheme was the $10,000-to-$15,000 salary classification of a research director employed by a company with a $20,000-to-$50,000 research budget.

The $15,000 to $20,000-dollar-a-year men came mainly from $100,000-to-$500,000 research budget companies. Research directors with salaries in the $20,000-to-$25,000 range were most frequently associated with firms having research budgets somewhere in the vicinity of $1 million. A salary of between $25,000 and $50,000 regularly went hand-in-hand with a research budget of $2 million to $5 million. Well above the norm was one individual who is paid between $25,000 and $50,000 by a firm having a research budget in the $100,000-to-$500,000 spread.

It's hard to deduce just how age and experience figure into the picture. But several facts stand out clearly. The lower income groups ($15,000 or less) are made up of young men and a sprinkling of people with as much as 15 years' industrial research experience (though not necessarily as directors); yet not a man appears in the top bracket ($25,000 or more) who has not had his last degree for more than 17 years. As a matter of fact, the average time out of college for this latter group is better than 25 years.

*Attitude

On the whole, the research directors replying to the CW survey felt they were running about even with the



WIDE WORLD

New Light on Undersea Warfare

EERIE GLOW, emanating from cylinders of radioactive cobalt at the bottom of a water tank, illuminates researchers Samuel S. Jones and Rudolph Fox of Knolls Atomic Power Laboratory (operated for Atomic Energy Commission by General Electric Co.). The powerful new radioactive source, shielded by nine feet of water, will be used to determine the effects of high-energy radiation on materials for the land-based submarine atomic power plant the Laboratory is constructing for U.S. Navy.

Experienced

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ENJAY markets this wide range of industrial chemicals:

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The solvents and chemicals sold under the ENJAY* Oval Trade-Mark are outstanding for high quality and dependability. Every day more industries are calling on the long experience of the Enjay Company . . . making greater use of the diversified line of solvents and chemicals marketed by Enjay to increase product quality.

ENJAY products are marketed in bulk or in quantities to fit your requirements.

ENJAY COMPANY, INC., 15 West 51st St., New York 19, N. Y.

Niagara's HYGROL DRIES AIR BEST

with exact moisture content

- to control your product's quality
- to prevent condensation on your product or material
- to prevent changes due to moist air in contact with your product
- to protect your material from dampness
- to protect your processing of moisture-sensitive material
- to DRY your material or product
- to pack or store your product safe from moisture damage
- to get exact moisture control for the precise atmosphere condition you need
- to provide precise atmospheric conditions for testing
- to increase your air conditioning capacity
- to DRY large quantities of fresh air from outdoors

The Niagara's Controlled Humidity Method using HYGROL moisture-absorbent liquid is

Best and most effective because . . . it removes moisture as a separate function from cooling or heating and so gives a precise result constantly and always. Niagara machines using liquid contact means of drying air have given over 20 years of service.

Most reliable because . . . the absorbent is continuously reconcentrated automatically. No moisture-sensitive instruments are required to control your conditions.

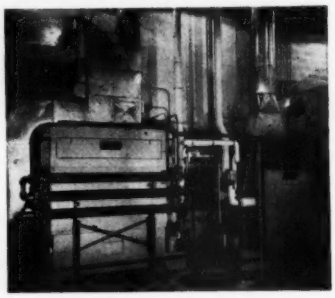
Most flexible because . . . you can obtain any condition at will and hold it as long as you wish in either continuous production, testing or storage.

Easiest to take care of because . . . the apparatus is simple, parts are accessible, controls are trustworthy.

Most compact, taking less space for installation.

Inexpensive to operate because . . . no re-heat is needed to obtain the relative humidity you wish in normal temperature ranges and frequently no refrigeration is used to remove moisture.

The cleanest because . . . no solids, salts or solutions of solids are used and there are no corrosive or reactive substances.



Niagara Controlled Humidity Air Conditioning

This method removes moisture from air by contact with a liquid in a small spray chamber. The liquid spray contact temperature and the absorbent concentration, factors that are easily and positively controlled, determine exactly the amount of moisture remaining in the leaving air. Heating or cooling is done as a separate function.

For complete information write

NIAGARA BLOWER COMPANY

Dept. CI, 405 Lexington Ave., New York 17, N. Y.

District Engineers in Principal Cities of United States and Canada

pack. To the question: "How do you feel about your income status compared to men of similar position in the chemical and process industries?", 9% replied, "superior"; 67% thought they were doing "average"; 21% felt their incomes were "below average"; and 3% had no opinion or did not feel qualified to judge.

On the other hand, compared to men of comparable education and experience in other professions (medical, legal, etc.), 12% thought their incomes were "superior"; 39% felt their incomes were "average"; 44% believed their incomes were "below average"; and 5% would not estimate.

It's interesting to note that proportionally more members of the lowest and highest income groups felt they were lagging behind their industrial colleagues than those of the middle salary range. But the middle groups were strongest in their belief that they were doing worse than other types of professional men.

*Problems

Problems cited by research directors canvassed had a familiar ring:

- "Interference in research work by current operating problems, and projects initiated by sales."
- "Obtaining financial support for the development of lines of production which are outside the company's existing scope of operations."
- "Getting people to work together and developing new leadership in the organization."
- "Company willing to spend money on manpower, but reluctant to invest in expensive yet useful equipment which could increase overall efficiency."
- "Justifying to management a staff large enough to handle a substantial proportion of worthy projects."
- "Proper selection of projects."

But by far the most common research director's headache is technical manpower. Difficulty of obtaining staff, personnel turnover, maintaining salary levels in the face of rapidly rising costs are just a few gripes.

One facet of the manpower puzzle is well-stated in the comments of two harried victims of the conditions that prevail: "Our problem is obtaining staff to fit our established salary pattern. How can we hire good men in today's competitive market without being unfair to our present staff?" writes one research director. On the other horn of the dilemma, a colleague explains: "Our starting rates are slightly below the average at this time and we can do nothing about it because of wage stabilization."

Double-Duty Weapon

Next week centralization of research welcomes another convert to the fold. On Tuesday at Edgewater, N.J., the once-scattered Lever Brothers Co. technical family formally takes up housekeeping under the same roof.

Their new home, a two-building research center on the west bank of the Hudson River, replaces former quarters at Edgewater, Cambridge (Mass.), Hammond (Ind.), Chicago (Ill.), Woodside (N.Y.) and Hoboken (N.J.).

In strictly physical terms, it's comparatively easy to define the impact of consolidation on Lever research. The move brings the company's varied research activities (e.g., in the fields of soaps, detergents, foods and cosmetics) into intimate contact, could hardly fail to improve coordination and supervision from the top.

And the new research center, comprising a five-story laboratory building and adjacent pilot-plant, approximately doubles Lever's research capacity. Location, in Metropolitan New Jersey, puts it on the front steps of the company's New York City headquarters, close to sales outlets.

But what centralization and expansion means in terms of fundamental research policy is somewhat harder to divine. Coming as it has, in the golden anniversary year* of Lever research, and not too long after a shake-up in top management, the step could be deeply significant. And, indeed, it has been ventured that the spanking new Edgewater center is the tangible reflection of a new and increased emphasis on research.

Regardless of the magnitude of its role, however, the center should be an effective instrument for implementing research along traditional company lines. In addition to conventional chemical and physical laboratories, research director L. B. Parsons and his five operating departments have at their command such specialized facilities as a dental clinic, bakery, perfume laboratory, laundry and beauty shop.

Expand with Ease: Moreover, the brick and glass laboratory building embodies the modern approach to design of technical working areas; laboratories are functional and flexible. Example: Any laboratory can be enlarged by removing cinder block partitions which separate working space from utility rooms.

A powerful weapon for research, the new Lever facilities are no less an instrument of good will. Commu-

* Just 50 years ago, Lever Brothers Co. launched its technical development program in a two-man laboratory at Cambridge, Mass.

HERE IT IS!

a new solvent
with unusually high flash point (102°F)
extra fast dry time (335°F D.P.)

AMSCO Naphthol Spirits

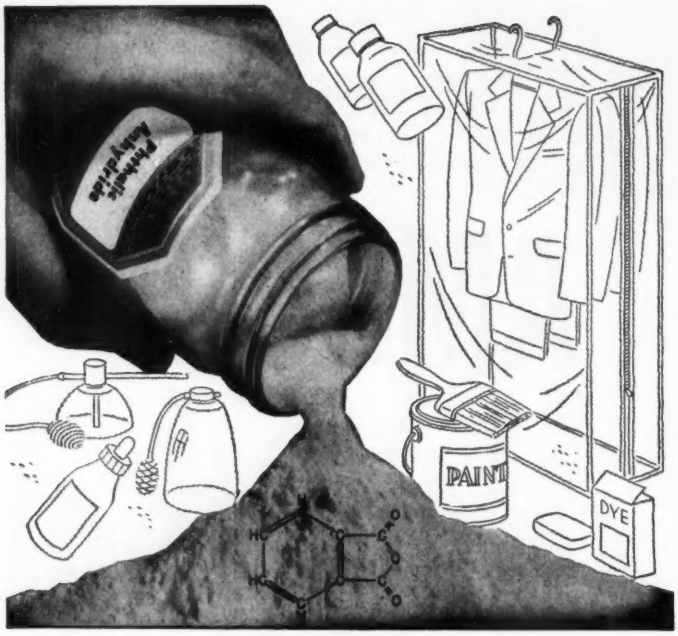
manufactured under rigid control to meet exacting specifications

AMERICAN MINERAL SPIRITS COMPANY

Service in 48 States

230 North Michigan Avenue, Chicago 1, Illinois
155 East 44th Street, New York 17, New York
8800 South Garfield Avenue, South Gate, Los Angeles, California

Complete technical data, prices and samples available on request



KOPPERS PHTHALIC ANHYDRIDE

known for its high quality

● "When water-white phthalate plasticizers are required, we prefer Koppers Phthalic Anhydride."

That's what so many of the country's best-known manufacturing concerns have told us about this quality product.

Koppers Phthalic Anhydride is a white solid in the form of small, free-flowing flakes. It has a minimum purity of 99.7%.

Its industrial importance is due primarily to the reactivity of the anhydride group with alcohols and the properties of the derivatives thus formed.

Phthalic Anhydride is used as a raw material in the manufacture of alkyd resins, in ester-type plasticizers, dyestuff intermediates, food preservatives, medicinals, pharmaceuticals, insect repellents and perfume fixatives.

A request on your letterhead will bring you complete information on Phthalic Anhydride as well as an experimental sample. Write to Koppers Company, Inc., Chemical Division, Dept. CW-11-15, Koppers Building, Pittsburgh 19, Pa.

KOPPERS ®

KOPPERS COMPANY, INC.
Chemical Division, Dept. CW-11-15
Koppers Building, Pittsburgh 19, Pa.

nity relations in Edgewater should be no problem: In the interest of science, local housewives are invited, gratis, to do their laundry in the center's detergency laboratory.

●

Paper Push: Southern Kraft Div.'s (International Paper Co.) new, $400,000 research laboratory at Mobile, Ala., is now in action. The laboratory will concentrate on long-term studies of new pulp and paper grades obtainable from Southern forests; quality control and immediate technical problems will be left in the hands of individual mills. Proximity of the new facilities to the division's headquarters facilitates close coordination of research with production and engineering activities. Erling Riis, Southern Kraft vice president and general manager, claims the new scientific addition gives the division "a modern private research set-up equal or superior to any . . . found in the paper industry in the United States."

●

Combustion Speeder: A new combustion accelerator for metal analysis is offered by Fisher Scientific Co. (Pittsburgh, Pa.). It's called Combax accelerator, is a specially prepared, finely divided iron powder. Fisher says the new product will be of interest to metallurgists who have switched to the company's induction apparatus (from conventional tube furnaces) for the determination of carbon in steel and other metals. Relatively free of carbon and sulfur impurities, the iron powder speeds the ignition of nonmagnetic samples which ordinarily are hard to fire by induction heating.

●

New Growth Regulator: Researchers of Ethyl Corp. (New York, N.Y.) have uncovered a new plant growth inhibitor in α-cyano-β-(2,4-dichlorophenyl) acrylic acid (Ethyl 214). A 1% suspension of the compound, applied by spray, killed young tomato plants. But a 0.1% suspension inhibited growth without causing visible tissue damage. The material is synthesized by condensing 2,4-dichlorbenzaldehyde with cyanoacetic acid.

●

Quick Follow-Up: Close on the heels of Chas. Pfizer's magnamycin comes another new antibiotic for the control of microorganisms which do not respond to penicillin and other wonder drugs. Erythromycin by name, the substance was isolated by scientists of Abbott Laboratories (North Chicago, Ill.), is reported to be of value in the treatment of staphylococcus, streptococcus and pneumoccus infections. Under the trade name Erythro-

EASTMAN
INDUSTRIAL CHEMICALS

tecquinol*

POLYMERIZATION INHIBITOR

PEROXIDE-CATALYZED POLYMERIZATION ARRESTOR

STABILIZER

aldehydes
acrylates
acrylonitrile
vinyls
and other oxidizable materials

REACTION INTERMEDIATE

plus

Carboxylic acids	→	1,4-Acyloxybenzenes
Carboxylic acids	$AlCl_3$ →	2,5-Dihydroxy phenones
Amines	→	N-substituted p-Aminophenols N,N'-substituted p-Phenylenediamines
Formaldehyde	→	Heat-convertible resins
Benzaldehyde	→	Tetrahydroxy triphenyl methane
Olefins	→	2,5-Dialkyl hydroquinones
Phthalic anhydride	→	Quinizarin

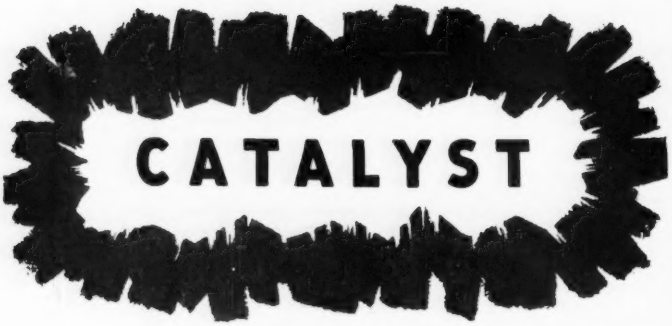
* EASTMAN technical hydroquinone

We will be pleased to send sample quantities of Tecquinol for your evaluation. Write to Tennessee Eastman Company, Chemical Sales Division, Kingsport, Tennessee.

SALES REPRESENTATIVES: New York—260 Madison Ave.; Framingham, Mass.—7 Hollis St.; Cleveland—Terminal Tower Bldg.; Chicago—360 N. Michigan Ave.; St. Louis—Continental Bldg.; Houston—412 Main St. **West Coast:** Wilson Meyer Co., San Francisco—333 Montgomery St.; Los Angeles—4800 District Blvd.; Portland—520 S. W. Sixth Ave.; Seattle—821 Second Ave.

TENNESSEE EASTMAN COMPANY, *Division of Eastman Kodak Company,* **KINGSPORT, TENNESSEE**

Mixed Alkanesulfonic Acid



FOR SENSITIVE REACTANTS

NONSULFONATING • NONOXIDIZING • RECOVERABLE

• Mixed Alkanesulfonic Acid is an unusually effective catalyst for a variety of organic reactions, such as acylation, alkylation, condensation, polymerization, and esterification, particularly where degradation of sensitive reactants occurs with conventional catalysts.

SEND FOR BULLETIN 11

INDOIL CHEMICAL COMPANY
910 SO. MICHIGAN AVENUE
CHICAGO 80, ILLINOIS

INDOIL®
CHEMICAL PRODUCTS

cin, the drug is available in limited quantities.

•

Answering the Call: Mindful of the current high level of industrial interest in odors and flavors, Evans Research and Development Corp. (New York, N.Y.) has recently expanded its organoleptic testing services by the addition of a new laboratory. Evans' organoleptic testing activities are now staffed by five separate sensory panels.

•

Canadian Expansion: Canadian Industries Ltd. will shortly embark on a major expansion of its McMasterville, Quebec, central research laboratory. Twelve new laboratories will be added to the existing building; a new building to house machine, instrument and glass-blowing shops is also in the works.

•

First-Hand Look: Officials of International Bank for Reconstruction and Development are now in Pakistan on the first leg of a five-week survey of the industrial research potential of that nation and Ceylon. Purpose of the visit: to ascertain for United Nations Technical Assistance Administration the advisability of establishing technical research institutes in the two areas. A research center at Frankfurt, now under construction by Battelle Memorial Institute (*CW, Nov. 8*), was conceived during a similar survey (though not under U.N. sponsorship) last year.

•

Tire Hope: A new type of GR-S synthetic rubber has sparked hope for increased tire-life expectancy. The new synthetic is a rosin-extended rubber, is made by the addition of wood rosin, disproportionated rosin, abietic acid and rosin dimer to an extra-tough type of cold GR-S. According to United States Rubber Co., which developed the material, it has shown 30% to 50% greater abrasion resistance than standard cold rubber in laboratory tests. Pilot-plant quantities of the new GR-S are being produced at Naugatuck, Conn.

Another dividend of rubber research comes from the laboratories of Connecticut Hard Rubber Co. The New Haven firm reports that silica deserves the credit for the highest strength ever recorded for temperature-resisting, silicone-type synthetic rubber. The improved material was produced by compounding silicone rubber with Silica GS119S, a new Du Pont reinforcing material. The silica increases strength, stretchability, and abrasion resistance.

NEW LIGHT ON AN OLD SUBJECT*

Bringing new light to bear on the varied uses of

its products is part of Niagara's service to industry.

NIALK® Carbonate of Potash

This potash salt is finding increasing favor in the development and production of special dyes for the textile industry, since its carefully controlled purity and quality are particularly helpful in achieving and maintaining a true color.

Quality plus cooperation keeps NIALK products at the forefront in research and product improvement.

NIAGARA ALKALI COMPANY

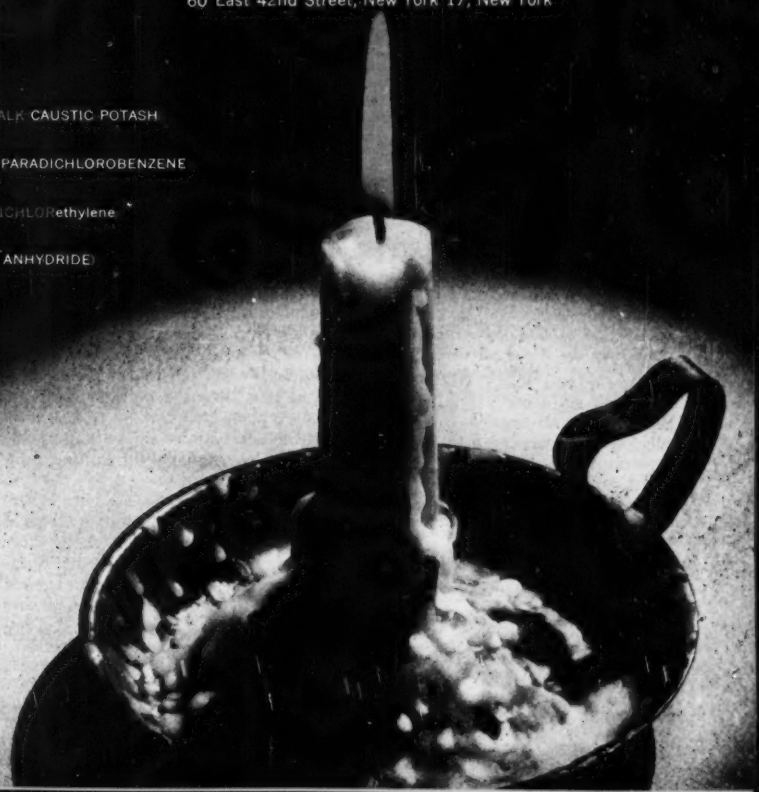
60 East 42nd Street, New York 17, New York

*NIALK LIQUID CHLORINE NIALK CAUSTIC POTASH

NIALK CARBONATE OF POTASH NIALK PARADICHLOROBENZENE

NIALK CAUSTIC SODA NIALK TRICHLORethylene

NIAGATHAL® (TETRACHLORO PHTHALIC ANHYDRIDE)



SLY

PIONEERS AND LEADERS IN

DUST CONTROL

Sly Dust Filter at the Walker China Co., Bedford, Ohio, prominent in the production of vitrified china for 25 years.

Two points of dust origin. Note hoods into which *all* dust-laden air is drawn, thence piped to Sly Dust Filter.

YOU, TOO, CAN BENEFIT BY SLY'S KNOW-HOW

Over 100 different kinds of dusts are being collected with Sly Dust Filters. Thousands of installations are in operation — they collect *all* the dust.

Sly Dust Filters are used on such difficult dust as powdered sugar, bentonite clay, paint and pigments, aspirin and other pharmaceuticals, chemicals of all kinds, talc, lime, detergents.

Designed and engineered so that they save on space and power, Sly Dust Filters require less attention, less maintenance, yet — they are not expensive.

We offer you the benefit of 50 years' experience in solving all kinds of dust problems. Let us solve yours. A Sly engineer is near you. Ask for Bulletin 98.

THE W. W. SLY MANUFACTURING CO.

4770 Train Avenue • Cleveland 2, Ohio

New York • Chicago • Philadelphia • Syracuse • Detroit
Buffalo • Cincinnati • St. Louis • Minneapolis
Birmingham • Los Angeles • Toronto

DISTRIBUTION..

Off with the Wraps

RAYONIER INCORPORATED is an industrial giant with sales, last year, of $83 million. But as far as public knowledge of its activities, products, and potential is concerned, it has been an industrial pygmy.

Distressed at this situation, the firm's management has embarked on a full-fledged promotion campaign to put Rayonier's candle on top of the bushel instead of under it. Illustrated above is the first of a series of two-page, full-color advertisements which will be run in national consumer publications.

The series will be aimed at answering one basic question—frankly stated in this first layout—"Who is Rayonier?" It is a question that even chemical process men, many of whom are in daily contact with the cellulose producer, have often asked themselves. One reason for the enigma: Rayonier is actually two companies—one of which was the personality of the company during the years before July, 1951; the other is the new face exhibited by Rayonier since Clyde Morgan took over the presidency of the corporation last year.

Morgan's influence is cutting a wide swath. The national advertising project is only one of many policy changes he has effected. His election to the position of president came in the final stage of a stockholders' tussle over the shape of Rayonier's future. Within months, he was demonstrating his faith in the outlook for cellulose and its derivatives. In addition, he has started diversification into other chemical fields.

The first step was to arrange a $40 million expansion loan. Twenty-five million of this is being poured into a new plant, the company's fifth, at Jessup, Ga. At least one million dollars a year is being spent on research. Although the bulk of this is still devoted to cellulose, a growing proportion will be directed toward the development of other products.

Rayonier's plant and timber holdings now exceed, in area, the entire state of Rhode Island. The company's chemical-cellulose capacity is currently 60% of the U.S. total. Its growth has been an accurate reflection of the increasing importance of the cellulose-consuming industries. Under Morgan, it plans to maintain its competitive pace—and do some broadening out besides.

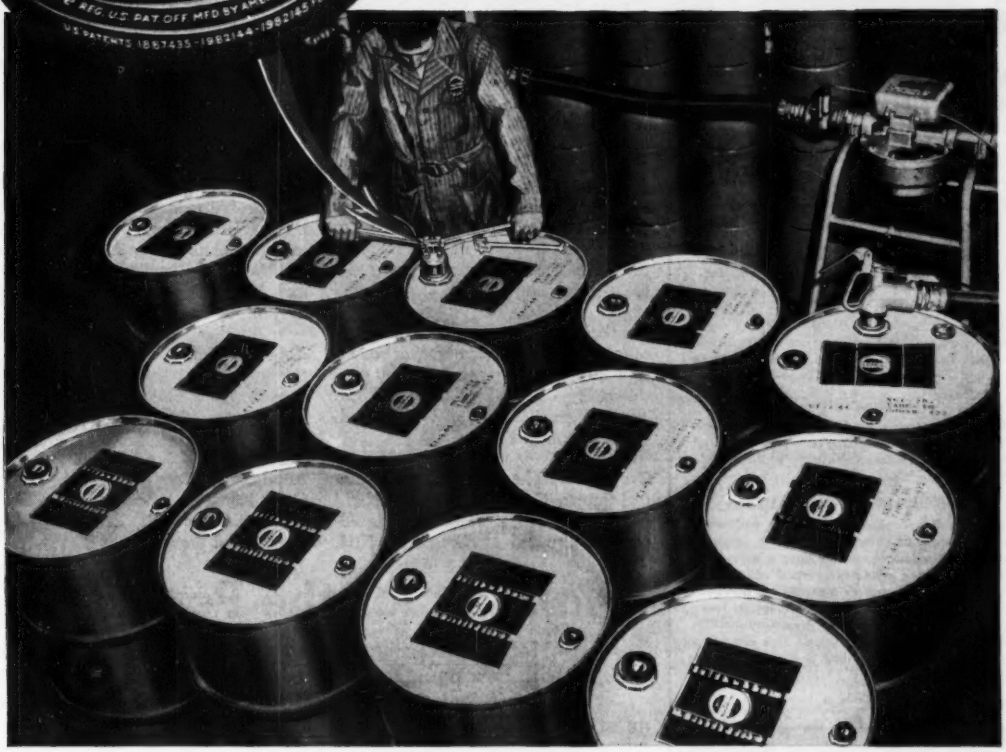
Three into One: The company is this year celebrating its silver anniversary. Starting in 1927 as the Rainier Pulp and Paper Co. (although 70 miles from its namesake mountain), it was one of three wood-pulp firms founded by Edwards M. Mills in the Pacific Northwest. Around 1930, its chemists developed a superior grade of pulp designed specifically for the rayon, acetate, and cellophane manufacturers.

During the next seven years, this chemical grade cellulose grew to become the major product of all three plants. By 1937 it seemed advisable to consolidate them into one company named Rayonier—a neat combination of Rainier and rayon, the primary outlet.

Subsequent to the consolidation,

PUNCTURE CENTER—TEAR ON SCORED LINES
WYNN'S
FRICTION PROOFING
OIL
Tri-Sure REG. U.S. PAT. OFF. MFD BY AMERICAN FLANGE & MFG. CO. INC. CHICAGO
U.S. PATENTS 1867435-1982144-1982145 FOREIGN PATENTS

protected from plant to purchaser by Tri-Sure Closures



WHEN the Wynn Oil Company started producing Wynn's Friction Proofing Oil Additive in 1946, business was conducted in a one-car garage—but the company determined to give all of its drum shipments the most dependable protection obtainable.

Tri-Sure* Closures were selected, and they have been used ever since on Wynn drums—now shipped from a large and modern processing plant on the West Coast.

The Wynn Oil Company exemplifies the scores of oil and chemical companies that have made *Tri-Sure protection* an inherent part of company policy. Year after year, these companies *prove* that it pays—in prevention of claims, in greater customer good will—to guard every drum with the Tri-Sure *Flange*, *Plug* and *Seal*.

Give *your* products Tri-Sure protection—the *dependable* protection against leakage, tampering, pilferage, and substitution. When you order drums, always specify "Tri-Sure Closures".

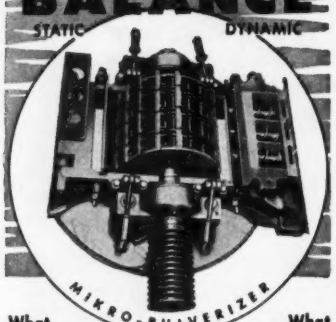
Tri-Sure
Reg. U. S. Pat. Off.
CLOSURES

*The "Tri-Sure" Trademark is a mark of reliability backed by 30 years serving industry. It tells your customers that genuine Tri-Sure Flanges (inserted with genuine Tri-Sure Dies), Plugs and Seals have been used.

AMERICAN FLANGE & MANUFACTURING CO. INC., 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.
Tri-Sure Products Limited, St. Catharines, Ontario, Canada

PERFECT BALANCE

STATIC DYNAMIC



MIKRO-PULVERIZER

What PERFECT BALANCE Does:

- Eliminates vibration.
- Lengthens life of machine.
- Permits ceiling suspension (when necessary).

What PERFECT BALANCE Gives:

- Flexibility in installation
- Smoother machine operation
- High constant rate of production

Long Life Span

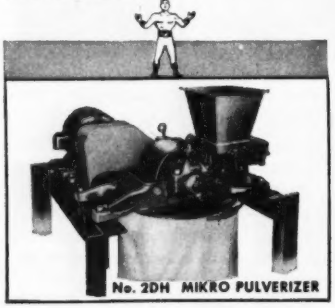
Many of our first MIKRO-PULVERIZERS, built more than a quarter century ago, are still in active service. Perfect balancing of all moving parts has had much to do with this longevity.

Catalog Tells All

If you are presently confronted with a problem concerned with pulverizing or granulation of materials, write today for a copy of the MIKRO illustrated catalog.

The MIKRO PLAN for Processing Efficiency

This plan has enabled both large and small manufacturers of diverse products to improve quality of product, increase volume and cut both maintenance and production costs. It can also be helpful to you if you have a problem in pulverizing or granulating materials. Just let us know what your problem is and the three-way MIKRO-PLAN will start to work for you. Our engineers will advise the best method and equipment to solve your problem.



No. 2DH MIKRO PULVERIZER

PULVERIZING MACHINERY COMPANY
54 Chatham Road Summit, New Jersey

MIKRO-PULVERIZER
ATOMIZER
Also Makers of the MIKRO-COLLECTOR

and during the war years, Rayonier continued to grow with its customers. But in doing so, it tended to be considered a sort of raw-material branch plant for the large cellulose consumers. Morgan is now trying to cut that umbilical cord—he wants Rayonier to do some growing under its own steam.

One basic step toward this goal is to establish the company as a forward-looking organization in the public mind. This would make it much easier to launch new products in the future. The current series of advertisements reflects this thinking. From Rayonier's new point of view, it is just the opening barrage of a long campaign.

•

Ain't so Bad: The Scientific Apparatus Makers Association has come up with a survey of its industry's sales costs. The association reports that the average apparatus salesman handles 260 accounts during any given year, is paid on a par with salesmen in other fields, and services a constantly decreasing territory.

•

Another Black: A new furnace black, described as a "super abrasion" material, is now being commercially produced by the Phillips Chemical Co. The designation applied to the product is Philblack E.

•

Gravity Fill: The New England Chemical Supply Corp. (Manchester, N.H.) has completed a new bulk liquid-storage terminal at Grasmere, N.H. One feature of the chemical storage installation is that gravity flow will be used in all phases of the liquid movement, from tank car to drums.

•

New Agencies: Producers have been actively expanding their distribution networks with the appointment of new distributors and sales agents. Here are some of them:

- Houston's Emerson Co. will act as a Styrofoam distributor in that city for the Dow Chemical Co.
- The New York office of Merchants Chemical Co. will be the metropolitan representative for Methocel, another Dow product. Shipments of the methyl cellulose can now be made from local stocks. Merchants' offices in three other cities are also handling the material.
- Technical sales agencies have been appointed by the Hilton-Davis Chemical Co. in St. Louis and Pittsburgh. Hilton-Davis' line of flushed and dry colors will be sold by Thompson-Hayward Chemical Co. (St. Louis) and by J. C. Ackerman Co. (Pittsburgh).
- Another St. Louis firm, G. S. Robins & Co., will be the representative in a four-state area for the American Resinous Chemicals and American Polymer Corporations (Peabody, Mass.).

•

Another White: The J. M. Huber Corp. has put a calcium zeolite white reinforcing material, Zeolex 20, into commercial production.

Plaudits for the Persistent

Market researchers, chemical-development men hit the jackpot with new liquid sulfur dioxide plant in Canada.

But it took twenty-five years to turn the trick. Next question: What are the chances of entering U.S. market?

"**Never say die**" should be the motto of all chemical-development men. But rarely are they able to point with more pride at results of their persistency than is the case with the news that Canadian Industries Ltd. has put on stream its long-heralded 100,000-ton liquid sulfur dioxide unit at Copper Cliff, Ontario.

The group within CIL which deserves plaudits for this is the Development Unit of the Chemicals Department. The chain of events which has now been anchored in solid accomplishment stretches back through more than twenty-five years of CIL history. The accomplishment is the result of closely meshed teamwork, not only between the Development Unit and the rest of the company, but also within the Unit itself. The latter's organizational structure points up the importance of this aspect. Here are the members of CIL's "development" team:

- **The Pioneering Section** is responsible for basic studies, outlining preliminary plans, initiating research projects. It had to lay out the theoretical process by which International Nickel's rich SO_2 gas stream (*CW, Nov. 10, 1951*) could be economically converted to the liquid state.
- **The Market Research Section** is the economic and statistical consultant for both the Unit and the Department. The burden of supplying accurate commercial guesses falls on the

ULTRAWET Detergents Mean Quality

In the Dairy Industry
cleanliness is the ideal
and cost the problem

ULTRAWETS
answer both

Atlantic synthetic detergents meet your customers' highest cleanliness standards and tightest budgets. From the milking machine to the milk bottle, there is an ULTRAWET made to satisfy each of your customers' demands. For instance, if you market:

ALKALINE CLEANERS The addition of an ULTRAWET to the alkalis and complex phosphates speeds penetration, enhances detergency, and improves rinsability. Shall it be ULTRAWET SK bead or K flake—each of which is available in two densities? The choice of *which* ULTRAWET is determined by such things as type of mixer used, desired finished product density, and product appearance.

ACID CLEANERS Whether you use phosphoric, hydroxyacetic, gluconic, lactic or citric acid in your milkstone remover—be sure to include ULTRAWET 30 DS in your formulated cleaner. The ULTRAWET 30 DS—or ULTRAWET DS if you prefer a flake instead of the liquid—shows the greatest compatibility with these acids, and speeds up penetration. That means a faster, better job done at a lower cost to you.

We'll be glad to discuss the ULTRAWETS with you and make specific recommendations as to which one will best fit your needs. Write The Atlantic Refining Company, Chemical Products Section, Dept. B-17, 260 So. Broad Street, Philadelphia 1, Pa.

In the East
THE ATLANTIC REFINING COMPANY
Philadelphia • Providence • Charlotte
Chicago

On the West Coast
L. H. BUTCHER COMPANY
San Francisco • Los Angeles
Seattle • Salt Lake City • Portland

In Canada
NAUGATUCK CHEMICALS
Division of Dominion Rubber Co., Ltd.
Elmira • Montreal • Toronto • Windsor
Winnipeg • Saskatoon • Calgary

ATLANTIC
PETROLEUM
CHEMICALS

Please send complete details on ULTRAWETS.

Name _____

Position _____

Company _____

Address _____

CENTURY BRAND

STEARIC ACIDS

Quality Uniformity Service

CENTURY 1240

Supra grade Stearic Acid—a white crystalline stearic acid particularly suited for use in fine cosmetics, creams and lotions, pharmaceuticals and other products requiring the highest grade stearic acid with a low iodine value of 0.5 - 1.5.

CENTURY 1230

Triple Pressed Stearic Acid—a fine grade finding wide usage where superior color and stability are needed.

CENTURY 1220

Double Pressed Stearic Acid—a regular grade of stearic acid for use where good color and lower titre are acceptable.

CENTURY 1210

Single Pressed Stearic Acid—a standard single pressed grade of better than average color for use where cost is a factor.

OTHER CENTURY PRODUCTS

Red Oil • Hydrogenated Fatty Acids
Animal and Vegetable Fatty Acids
Glycerine
White Oleine • Stearine Pitch

W. C. HARDESTY CO., Inc.
Century Stearic Acid Products, Inc.
41 East 42nd St., New York 17, N. Y.
Plant: Dover, Ohio
In Canada:
W. C. Hardesty Co. of Canada Ltd., Toronto

CIL's SO_2 PLANT: A market status is never static.

shoulders of this section. It continuously had to revise its estimates on how much liquid dioxide could be disposed of within a logical area around Copper Cliff—and at what price.

• **The Intelligence Section** is the "memory" of the group. It collects facts, sorts them, indexes the items so that they are available in a logical form for the other team members.

• **The Chemical Engineering Section** handles preparation of detailed process designs, makes capital-expenditure estimates, accumulates economic studies relative to location of plants. Its members built the SO_2 pilot plant and supplied the figures on operating costs which were the key to the final decision to build a large-scale plant.

False Start: All of these diverse activities were essential in laying the groundwork for the final result. Many a pitfall had to be hurdled, and more of the same are ahead. In the fast-changing world of sulfur supply and demand, a new venture has to take both long-range and short-term gambles.

As long ago as the late '20s, CIL played with the idea of utilizing the sulfur being sent skyward as dilute SO_2 by International Nickel's smelter. The chemical company used some of it as raw material for sulfuric acid. But this usage was sharply limited by the economics of the acid market in that non-industrialized region.

A much less restricted market could be found for the material in the form of liquid sulfur dioxide. Twenty years ago, CIL went so far as to build a pilot plant for such a conversion. Technically, the experiment was a success, but the dilute stream, containing only 4% SO_2, made it economically unsound. The whole project was shelved.

Then six years ago, about the time CIL's Development Unit was formed, International Nickel solved the major problems surrounding the smelting of some of its ores with tonnage oxygen. This opened up a whole new line of possibilities for the cooperating chemical firm. Reason: Some of the gas now available analyzes nearly 75% SO_2.

Freight Frustration: The Development Unit went into high gear. The first step, after a thorough investigation, was to give up the idea of re-reducing the dioxide to elemental sulfur. Neither coal nor natural gas were available in the Copper Cliff area. But it did seem reasonable to believe that the gas could be purified and liquefied for sale as SO_2 itself.

The Market Research Section made a survey of the potential market for liquid sulfur dioxide. This search for outlets had to go well beyond merely finding present consumers of the chemical. CIL's venture, if it were to be successful, would have to replace sulfur shipped in from the U.S. Potentially, the dioxide could be used as a substitute, but the consuming processes had not yet been worked out. Since sulfite-pulp producers are the largest Canadian buyers of mined sulfur, the market investigation narrowed down to that industry.

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was working out a theoretical liquefaction process. The chemical engineering group expanded the plan and prepared to build a pilot plant. At the same time, both groups worked together on the development of a scheme whereby liquid SO_2 could be used by sulfite-pulp producers. The Abitibi Power and Paper Co. agreed to open up a mill for a pilot-plant trial.

Success attended all of these technical projects, but a year and a half had slipped by. The market research men, actively refining their forecasts and bringing costs up to date, were running into trouble. Freight rates had been a primary consideration from the start, and now they had increased to the point where they were threatening the economics of the whole plan. All indications pointed at still higher rates to come. It was not a bright outlook.

Sulfur Switch: But the Korean war changed the picture abruptly. Sulfur rationing hit the Canadian pulp industry hard. Utilization of International Nickel's waste gas became of national importance. CIL was urged by the pulp and paper industry to erect its plant; and assurances were given that the major portion of the product would be purchased by the industry.

The Development Unit was well prepared to take advantage of this turn of events. Final estimates were rushed into shape, and the recommendation to build was approved by management. Twenty-five years after the first glimmerings of an idea, CIL development men can now view the fruit of their efforts.

Across the Border?: Although the original project was initiated mainly to supply pulp plants relatively close to Copper Cliff, it is possible that CIL's new production may eventually reach the American sulfur and sulfur dioxide market.

The Canadian company's officials are keeping mum on their commercial plans. Reports are, however, that pulp companies have contracted for most, but possibly not all, of the plant's capacity. If this report is true, and if they take less than can be produced, SO_2 will be available for other consumers. Economically, these should have to lie fairly close to Copper Cliff. Informal estimates judge this distance to be no more than 400 rail miles.

But other reports indicate that CIL's f.o.b. price is under $20 per ton —only a fraction of the going price in the U.S. The applicable duty is 12½%, based on the Canadian selling price. This could make the total imported figure low enough to absorb a healthy

amount of freight. The entire project has received special consideration from Canadian railroads, which will be a big help if CIL decides to enter the American market.

These are some of the question marks for the future that are still facing the men in CIL's Development Unit. Even though their plant is now built and running, they still have a job to do.

Two Sides, Same Desk

The rapidly changing balance of chemical supply and demand since the end of World War II has evoked miracles among the industry's purchasing agents and sales personnel.

Fast disappearing is the stereotyped buyer, frosty-eyed and gruff of voice he isn't a very good man to have around when commodities suddenly get tight. Also unpopular is the two-faced salesman—all smiles when a surplus is overhanging the market, but a hard-hearted tyrant when the industry is on allocations. To an increasing extent, both buyers and sellers are coming to realize that—despite the oppositeness of their jobs—they have much in common. They are sitting on two sides of the same desk.

Symbolic of this trend is the news that the New York chemical community has acquired a new social and professional organization. Known simply as "The Racemics,"* it is dedicated to the proposition that men on both sides of the purchase-sales relationship are dependent on each other, that both can do a better job if they understand the other's problems.

Forerunner: Organized by Bill DuVal (a Dow salesman) and George Polzer (an American Cyanamid purchasing agent), the group is now laying plans for its first Christmas party next month. Activities to date have been limited to monthly "Dutch-treat" luncheon meetings, with either an outsider or a member as speaker.

Present plans are to limit the membership to two dozen men, or less. If the group became any larger, its members feel, it would lose the informal atmosphere on which it is based.

But with missionary zeal, cofounder DuVal is sure that this limitation will not put a ceiling on his group's influence on the industry. "There is room for many more clubs like ours in New York alone," he says. "We hope the success of our project will inspire salesmen and purchasing agents to get together for their own common good in all parts of the country."

* Freely translated—an equimolecular mixture of oppositely optically active substances.

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PRODUCTION...

No Longer Rare

With an annual production in this country of about 500,000 ounces and a price tag of $2.25 an ounce, indium has always been considered a rare metal. But late last month at the 102nd meeting of the Electrochemical Society in Montreal, three men from Consolidated Mining and Smelting Co. of Canada, Ltd. (Cominco) revealed their firm has a new process for making the pure metal, is ready to jump into "commercial" production at a rate of 35 tons a year.

That doesn't mean that the price will immediately start to tumble. For while Cominco looms as the world's major indium supplier, it says it doesn't envision any price cut at least for some time. Says one senior sales official: "We're not concerned with undercutting competition. Indium's price will eventually find its own level. Right now, we're giving away samples to universities and research people. Our first aim is to promote development, to find new applications."

But J. R. "Rollie" Mills, chairman of Cominco's research board at Trail, B.C., who presented the paper at Montreal on behalf of his co-authors B. G. Hunt and G. H. Turner, told *CW*: "Indium's no longer a 'rare' metal. It could now be more aptly described as a 'strategic' one."

Plastic, Pliable: Presently, the principal indium producers are the Indium Corporation of America and Cerro de Pasco Corp. These two firms pioneered indium application. Among their more fruitful efforts: in aircraft bearings where it improved corrosion resistance without impairing fatigue resistance; in British racing car motors (a diffused indium coating provides a low coefficient of friction, good resistance to corrosion and anti-seizure properties); in low melting alloys for surgical casts, foundry patterns, fusible safety plugs, glass sealing alloys.

In appearance, indium resembles platinum; its chemical properties are more closely related to aluminum. And in some respects it's quite similar to tin. It is, however, the softest of the solid metals that are stable in air. It's so soft, in fact, that it can be scratched by a fingernail, will adhere to another metal if rubbed on it. And it's so plastic that it can be deformed almost indefinitely under compression.

Mills and his staff of engineers look forward to a whole new field of applications for indium. Because of its softness, plasticity, ability to bond to steel without diffusion or reaction and because of the ability to keep lubricants in a non-corrosive condition, they think indium and indium compounds have a particularly bright future as additives to lubricants. Other promising outlets:

- chrome plating where the addition of indium to chromium plating baths reportedly reduces brittleness of the plated chrome.
- electrical and electronic field in resistors, rectifiers, electrical contacts and thermistors. The oxides, sulfides, selenides and tellurides of indium are all semi-conductors.
- alloys with titanium. Mills reports that investigations show indium additions to titanium cause a small increase in strength with a slight decrease in ductility. He doubts there's much of a future for straight titanium-indium alloys but does think that titanium-indium alloys may prove useful as bases for other additions.

Although any zinc producer can recover certain amount of indium as a by-product of zinc smelting, Mills thinks Cominco is in a favorable position because the indium concentrates heavily in one spot. Says he: "It just seems to gather itself together. Our set-up at Trail is such that it follows the residue from the zinc plant to the lead smelter and eventually accumulates in drosses from the lead blast furnace."

Efforts to extract the indium at Trail date back to 1940. But only recently did Mills and his team perfect the present electrochemical and electrolytic process, details of which are still confidential. Currently, the process is being used in a pilot plant to turn out 99.95% indium. But Cominco says it can swing into its projected annual production of 35 tons on six months' notice whenever demand warrants it.

Departure in Design

Eastman Kodak reports it is now nearing completion of its new Kodak Park plant (in Rochester, N.Y.) for making Kodak Elron developing agent (monomethyl - para - aminophenol sulfate). Among the design features is the ventillation system which is a departure from normal for such a plant: Cleaned air is introduced under pressure from ceiling ducts above the reaction vessels. It is then sucked down through underground ducts where it's washed, dirt particles removed and the air is ready for recirculation.

136

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Destination: Drilling

A FLOATING PLANT proved a slick answer to a knotty problem for Freeport Sulphur Co. (CW, Oct. 18). Now Shell Petroleum is applying the same technique to an entirely different sort of a problem: The pictured barge is a self-contained electric drilling barge, the first of its kind built and equipped in Britain. Launched recently at Port Glasgow, it is destined for drilling operations in Lake Maracaibo, Venezuela. When used in conjunction with a permanent drilling platform at each well site, it will be capable of drilling to depths of 1,500 ft. It is expected to operate 30 days without refueling.

EQUIPMENT. . . .

Heating Unit: The Edwin L. Wiegand Co. (Pittsburgh, Pa.) reports it has designed a new immersion-type electric heating unit for electroplating baths. Called the CTL heater, it's equipped with a lead sheath to resist the corrosive action of acid solutions of copper, chrome, nickel. Advantages claimed over steam heating units: no dilution, hence faster, smoother plating; better conditions for the workers because it gives off less heat and moisture. Rated at 5 kw. on 230 v., the heaters are controlled by thermostats to permit automatic temperature regulation.

•

High-Slip Motor: General Electric Co. (Schenectady, N.Y.) has just brought out an enclosed, fan-cooled, high-slip induction motor to accelerate high-inertia loads such as punch presses, centrifuges, hoists. G. E. claims the new motor—Type KRX—is smaller (up to 30%) and lighter (up to 40%) than competitive models. This is possible, it says, because of an improved design that provides for more efficient dissipation of the heat normally generated by high-slip motors.

Weigh on the Move: Lamson Corp. (Syracuse, N.Y.) has installed in a gum factory a conveyor line with a built-in scale. Cartons can thus move directly from production to shipping with no detour or stop for weighing.

•

Haveg Sparger Nozzles: Schutte and Koerting Co. (Cornwells Heights, Pa.) now makes sparger nozzles out of Haveg since that material is resistant to acids, salts and solvents. Sparger nozzles are used to discharge steam into liquids to raise their temperature.

•

Materials: Knapp Mills, Inc. (Long Island City, N.Y.), has developed an improved model of its cladding machine to make Ferrolum lead-clad steel and Cupralum lead-clad copper. The new machine can double the lead thickness, can apply it in a 3½" band (vs. the 2" maximum of the earlier model) . . . Solar Aircraft Co. (San Diego, Calif.) has now developed over 4,000 ceramic coatings for metals, including some that will protect low-alloy steels up to 1,200 F. Research is under way on coatings applicable to mild steel.

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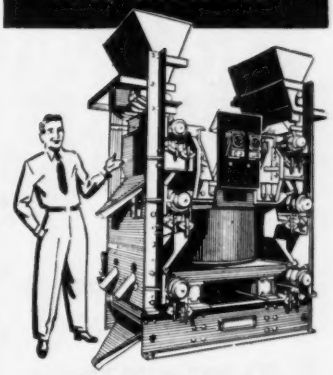

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Automatic Filling Grows Up

Automatic, assembly line filling of small containers is an old story to many chemical firms and specialty manufacturers. But doing the same thing with 55-gal. drums is no small trick, chiefly on account of the lack of uniformity in sizes among drums that big. Thus, when Standard of California engineers designed and installed a completely automatic drum filler on the lube oil filling line at its Richmond refinery last year, management looked on it as a significant advance, a likely means of cutting costs.

This week, management has no cause to change its mind for the records show that after fifteen months of operation, the filler has saved about $15-20,000 a year on labor costs alone, while Standard engineers figure that maintenance costs are in the neighborhood of $200 a year with an additional $200 a year for a feed pump and other facilities that would be required for any filling device. Moreover, the firm has managed to make a sizable bite into losses caused by overfilling. It estimates, for example, that for each drum, overfilling by a manual filler amounts to 2-2½ lbs. The new filler limits overfilling errors to the accuracy of the scale which at Richmond is 1 lb.

A deserving nod in the development of the filler goes to The Rucker Co. (Oakland, Calif.) which was called in after the various mechanical components and linkages were completed to engineer the control circuit. Although Standard's interest in the filler is confined—at least for the present—to its own drum filling operations, Rucker points out it could be easily adapted to other liquids including chemicals. It has recently concluded an agreement with Standard whereby it will custom-design and sell the units. And it is currently working on a lance for dry feeding which, it hopes, will broaden the versatility of the machine.

The drum filler at Richmond can handle 1,000 55-gal. drums during an eight hour shift. It works best, of course, on large orders where it can operate through several shifts without interruption. Standard has found it economical, however, to use the filler on orders as small as 10-15 drums provided clean-up time can be minimized by scheduling families of oils for the same run.

Standard's Standards: The big difficulty in designing the filler was accommodating it to drums of varying heights and diameters and with different bung offset distances from the edge or chime of the drum. The task boiled down to making it flexible enough to handle a wide variety of drums, at the same time keeping development costs within a reasonable limit. These are the sizes decided on: height, 32-36 in.; diameter, 22-24 in.; bung offset distance, ⅝ in. from either side of a selected average value.

The solution to the problem was a two-station system, the first to line up the bung and the second to fill the drum. At the first station, there are two pairs of rolls ("gates") that bear on the top chime of the drum. These gates, actuated by hydraulic cylinders, meter drums into the line as needed, hold the drum in place and rotate it slowly.

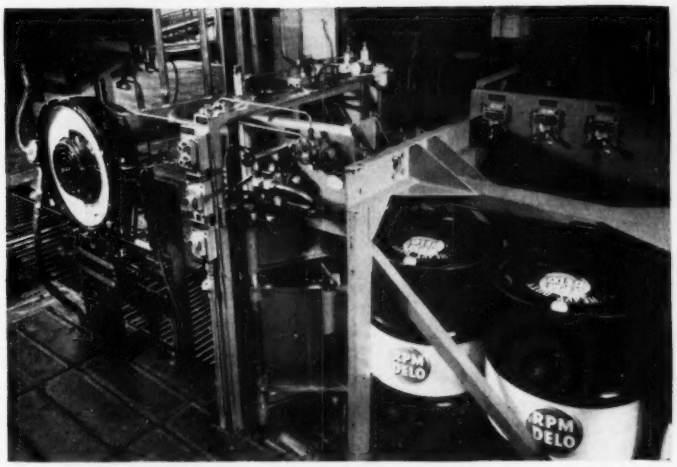
When the drum is in position at the station, an overhead carriage is lowered to the top of the rotating drum. A "finger" from the carriage rides along the top of the rotating drum, drops into the bung when the bung reaches the centerline of the conveyor. That automatically sends an impulse that stops the rotation and opens the downstream gate to allow the drum to move forward to the second station.

At the second station, when the control circuit receives a signal indicating a drum has been filled, the overhead carriage moves forward, simultaneously pushes the full drum off the scale and pulls the next one on. It then retracts to its original position at the first station.

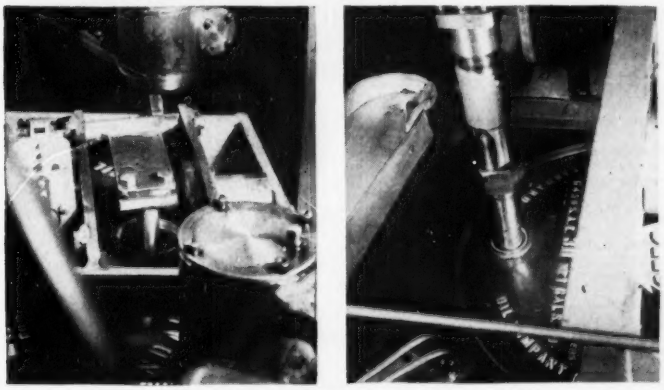
A filling lance lowers into the drum and the oil starts to flow when it reaches the bottom of its stroke. In a few seconds the tip of the lance is completely submerged (filling rate is 225 gpm), thus minimizing foaming. When the scale shows that the proper net weight is being approached, the oil flow is reduced to a dribble, is cut off when the exact net weight is reached.

Small-Scale Coke Oven

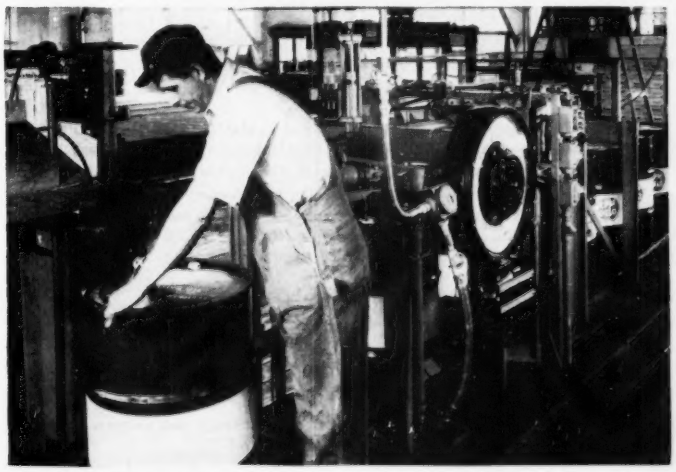
A step forward in coke-coal testing is claimed by the U.S. Bureau of Mines as a result of its new testing oven. It is said to more nearly duplicate carbonizing conditions than present models, to yield a coke very similar in quality to that produced in commercial ovens. Its main point of difference from existing models is its width, 17 in., which is nearly the same as that for full-scale commercial models. Also, it compensates for heat losses in the charge.



1 EMPTY DRUMS ARRIVE at the upstream end of the automatic filler. Roller gates admit one drum at a time to the bung locating station . . .



2 . . . WHERE POWERED ROLLER GATES revolve the drum until a locating "finger" drops into open bung (left). It's then moved to the filling station (right).



3 AS FINAL STEP, operator closes bungs and cap seals the filled drums on downstream conveyor. Only one operator is needed for the entire operation.

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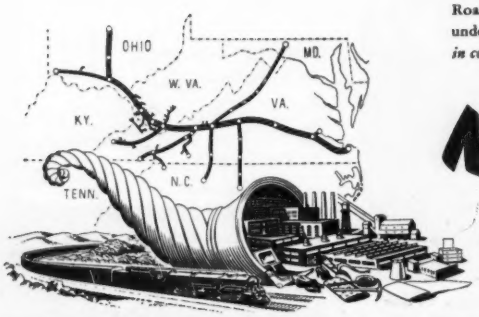

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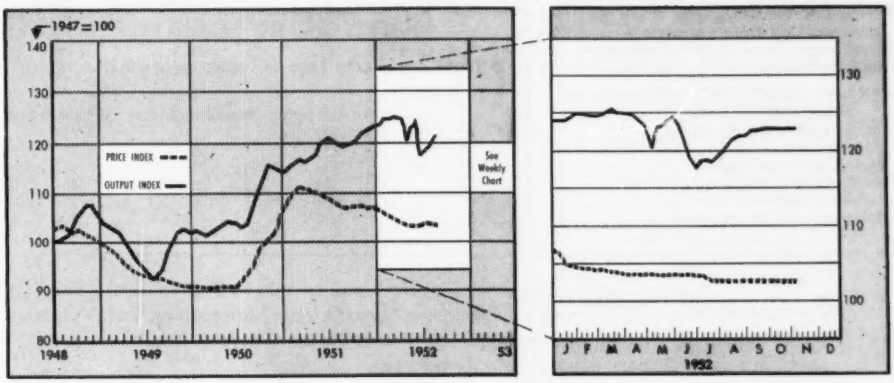


CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

NPA controls on sulfur are now removed and sulfur producers are gleeful.

However, the glee is not unbounded; price and export controls are still in effect. Agitation to scuttle price control will probably gather steam.

As for exports—despite removal of regulation M-69, there will be plenty to ship out, NPA says.

Urea tightness persists and will continue several weeks longer. But more shipments from abroad are expected to ease the tension by the first of the year.

One cause of the shortage: continuing demand from plastics molders; their usual seasonal decline, following the toy stock build-up, has not materialized this year.

Commerce Department's Office of International Trade has relaxed DDT export licenses. Previous requirements included submission of statement of past participation in DDT exports. OIT says let-down action is due to (1) improvement in U.S. DDT supply and (2) previous establishment of an "open-end" DDT quota.

A combination of forces is pushing antimony prices down. Foreign competition plus private domestic stockpiles (gathered after the Korea scare) add up to a long-time surplus.

One dim hope for more strength in the antimony market: the government fabric flame-proofing program—a potential consumer of much antimony oxide.

Glycerine, all grades, remains firm. Continued heavy shipments from the Argentine and elsewhere promise early supply relief.

Current firmness stems from (1) dullness in soap production during summer (2) two-month Shell strike and (3) failure of importers to anticipate market conditions, place orders abroad.

Despite tightness, price is unlikely to rise—glycerine producers are too competition-conscious.

MARKET LETTER

WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	122.7	122.6	122.9
CHEMICAL WEEK Wholesale Price Index (1947=100)	102.6	102.6	106.9
Bituminous Coal Production (daily average, 1,000 tons)	1,529.0	358.0	1,889.0
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	241.1	231.3	190.0
Chemical Process Industries Construction Awards (Eng. News-Record)	$25,418,000	$48,788,000	$15,165,000

MONTHLY INDICATORS—PRODUCTION (Index 1947-49=100)	Latest Month	Preceding Month	Year Ago
All Manufacturing and Mining	225	214	218
Durable Manufactures	285	266	271
Non-durable Manufactures	194	191	192
All Chemical Products	308	303	301
Industrial Chemicals	581	569	560
Petroleum and Coal Products	282	279	266

Tennessee Valley Authority fertilizer will be sold in Pennsylvania for the first time. TVA made a deal with Associated Cooperatives, Inc., under which it will be sold through the Pennsylvania Farm Bureau Cooperative Association, a wholesale distributor.

First material to be marketed is a concentrated superphosphate—about 48% P_2O_5. Before the material reaches the farmer, it will be mixed with potash; he'll get it in the form of 0-20-20 fertilizer.

Farmers who buy the product must agree to use it on pasture or other sod crop for soil improvement, TVA says.

If fertilizer manufacturers are not doing handsprings at TVA's activities in the field, they can at least take comfort at the action of another government arm—the U. S. Coast Guard—in easing regulations on calcium ammonium nitrate fertilizer.

This month the Coast Guard lifted restrictions on shipping, loading, and unloading that have been in effect since the Texas City disaster of 1947. In effect, it went back to its old regulations, removing some of the nettlesome rules that have caused spot shortages from time to time.

Biggest turnback: The fertilizer mixtures can now be loaded or discharged at any waterfront facility meeting port security and local regulations rather than the isolated waterfront points set aside for handling "dangerous" cargoes.

Another chemical process industry—the pulp, paper and paperboard makers through their industry advisory committee—made a move to free itself from needless regulation. It recommended to NPA that Order M-36 (Government Orders for Paper) be revoked as no longer necessary.

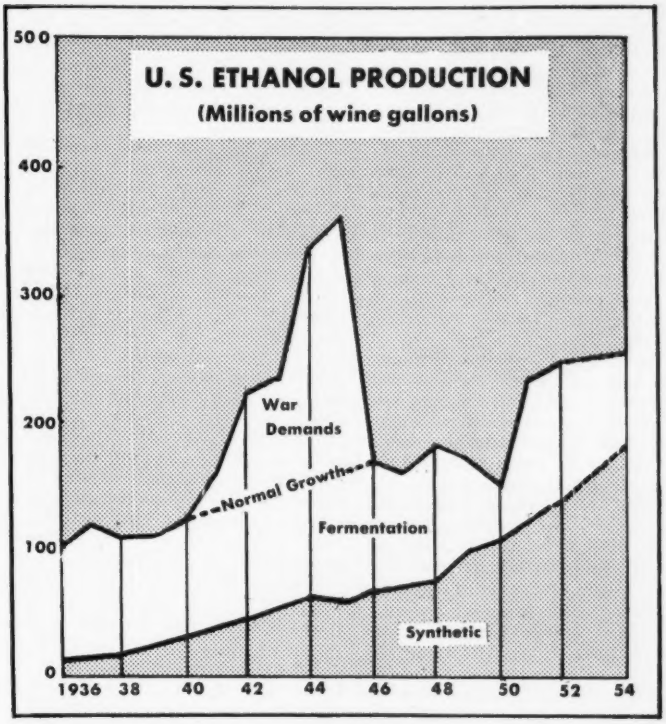
The order requires paper and paperboard makers to establish designated grades of paper and paperboard according to specified percentages of their monthly production to fill government orders.

Don't expect the recent price reduction in imported argol to be the last: Reason: Imported tartrates, subsidized by foreign countries, are giving U. S. argol refiners stiff competition; but American processors, well stocked with crude argol, will fight back—pricewise as well as with an appeal to the government.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending November 10, 1952

	Change	New Price		Change	New Price
UP					
Oil, Castor, Brazilian, No. 1, tanks	$ .025	$ .25¼	Casein, Argentine, acid precip., grd., 100 bag lots or more	$ .01	$ .23
DOWN					
Oil, Cottonseed, crude, tanks, Southeast	$ .025	$ .13¾	Shellac, bleached, bonedry, bgs., 1,500-lb. lots	$ .02	$ .44

All prices per pound unless quantity is stated.



Alcohol Run-Down

Du Pont's move to discontinue alcohol sales presages a further decline in fermentation alcohol's importance.

Government's re-opening the butadiene plant at Kobuta, Pa., is expected to absorb the alcohol surplus—at least temporarily.

Next summer, when the National Petro-Chemical plant at Tuscola, Ill., goes onstream, production balance will shift farther toward the synthetic product.

In one of his horror tales, Edgar Allan Poe described a death chamber wherein a victim was strapped beneath a swinging pendulum. This fiendish device, complete with razor-sharp bottom edge, descended slowly upon the helpless body. Eventually its sweeping knife-edge would slice through the victim.

Last week, the economic pendulum characteristic of the alcohol industry continued its latest downswing. E. I. du Pont de Nemours & Co. announced that due to "today's unattractive picture" it would no longer sell alcohol.

Du Pont's action, in itself, should not be particularly disturbing to the trade; by industry standards it has not been a large producer for sale purposes. And in Du Pont's own words, "When additional synthetic alcohol production now under way becomes available around the middle of 1953, there will be sufficient capacity to take care of the entire country's requirements."

However, viewed in the light of the events of the past year, Du Pont's move takes on added meaning. Late last year the price pendulum reached a top in its course. Then, in January, it started its downsweep; that month fermentation alcohol slid from 90¢ per gallon to 75¢. In May another drop to 55¢ landed it at the synthetic alcohol price level. And now the knife-edge appears to be swiping still lower.

Other Times, Other Swings: Following the abnormal demand of World War II, alcohol consumption resumed its normal course. The swing started upward. By late 1948, boosted by a blackstrap molasses price of 37¢ per gallon (seven times pre-war) alcohol

Fact file on fatty alcohols ends puzzlement

What can fatty alcohols do for me?—isn't that the nub of the matter? To help those who are looking for concise information on how to use these most versatile chemical raw materials, a booklet has been published describing uses for CACHALOT fatty alcohols. Frankly, the listing is far from complete, for profit-minded chemists are daily coming up with new uses for cetyl, oleyl, and stearyl alcohols. But you may find here a good idea on how to use the CACHALOT alcohols as penetrants, emulsifiers, stabilizers, foam depressants, or work them as intermediates in the production of esters, aldehydes, chlorinates, etc. For a copy of the "CACHALOT Guide to Fatty Alcohols" just write M. Michel and Company, Inc., 90 Broad Street, New York 4, N.Y. They have been basic suppliers to chemical manufacturers for more than twenty five years and their trade name for the best fatty alcohols is

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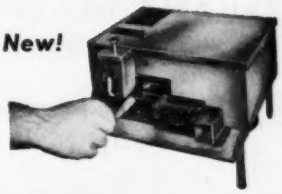

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rose to about a dollar a gallon.

Meanwhile the synthetic alcohol force gathered for the inevitable downsweep. Secure in its lower costs, it flowed on at a 75-million gallon clip, about equal to the molasses alcohol output of 1948.

By early 1949, production had overtaken consumption. Alcohol price tumbled to a low of 17¢, squeezed molasses to a thin 4¢. The drop in output that followed was absorbed by the fermentation producers. In sharp contrast, synthetic alcohol spurted ahead of its rival, ran over 100 million gallons that year.

The Korean crisis shoved the pendulum back up once again, gave fermentation alcohol a new shot of life. Demand for synthetic rubber, explosives, other defense materials boosted the industry so that by middle 1951 (1) fermentation alcohol brought 90¢ a gallon (2) blackstrap molasses rebounded to 36¢. And at the same time, synthetic production rolled on to a new high, now 25% up from 1949.

The recent downswing followed.

Times Change: Despite these price fluctuations, definite changes in factors can be detected. Formerly, when demand for alcohol rose (as in 1948), the price was practically dictated by what the molasses producers thought the traffic would bear. Synthetic alcohol, largely captive, at that time exerted little influence on market price.

But today, with ever greater quantities reaching the market, low synthetic alcohol costs override molasses producer demands. Right now, for example, Cuban producers find that to attract customers, they must match synthetic costs, offer blackstrap at 7¢ or less. Even at this low figure, fermentation producers such as Du Pont are tired of the raw material up-and-down-hill chase, desire a stable source most of all.

Government Influence: Synthetic rubber production will continue as an important influence on the alcohol market. Subject to the judgment of the RFC as well as immediate rubber requirements, its 180-million gallon potential alcohol consumption must be reckoned with.

Latest move in synthetic rubber is the re-opening of two units of the government plant at Kobuta. The timing of this action, planned or fortuitous, could not have been better. Temporarily, at least, it will serve to absorb the present alcohol surplus, stave off another cut in fermentation output.

Summer 1953: Two events important to the fate of fermentation alcohol are slated for the middle of next year. They are: (1) the opening of the 40-million gallon National Petro-Chemicals Corp. plant at Tuscola, Ill.; and (2) the possible RFC abandonment of the butadiene-from-alcohol units.

When National Petro-Chemicals goes on-stream, it should bring total synthetic alcohol in this country up to about 170 million gallons. At the same time that National Petro-Chemicals takes over deliveries for Du Pont, it will start delivering on contract to another fermentation producer. U. S. Industrial Chemicals, long in the alcohol field, will also receive part of the Tuscola plant output. It is expected that eventually this will mean the closing of USI's New Orleans plant.

These moves add up to an ever-more dominant position for the synthetic producers. Comparing its position in 1940 (last pre-war normal year) with the outlook for 1953 we find: 1940—total production 125 million gallons; per cent fermentation—72; per cent synthetic—28; in 1953—total production an estimated 250 million gallons; per cent fermentation—32; per cent synthetic—68.

The second event of mid-1953, the RFC final move from alcohol to more petroleum as a source of butadiene is not yet certain. It is known, however, that government plans for additional butadiene-from-petroleum plants are under way, construction work planned for late spring or early summer. But no decision on discontinuing butadiene-from-alcohol is likely to come for several months.

Should the switch away from alcohol actually occur, then the knife of economics will indeed cut into the fermentation body.

In Poe's tale, the intended victim, by a brilliant stratagem, finally extricated himself. But the economics of comparative raw materials—not a script writer—will decide whether fermentation producers can elude the price pendulum held low by synthetic makers.

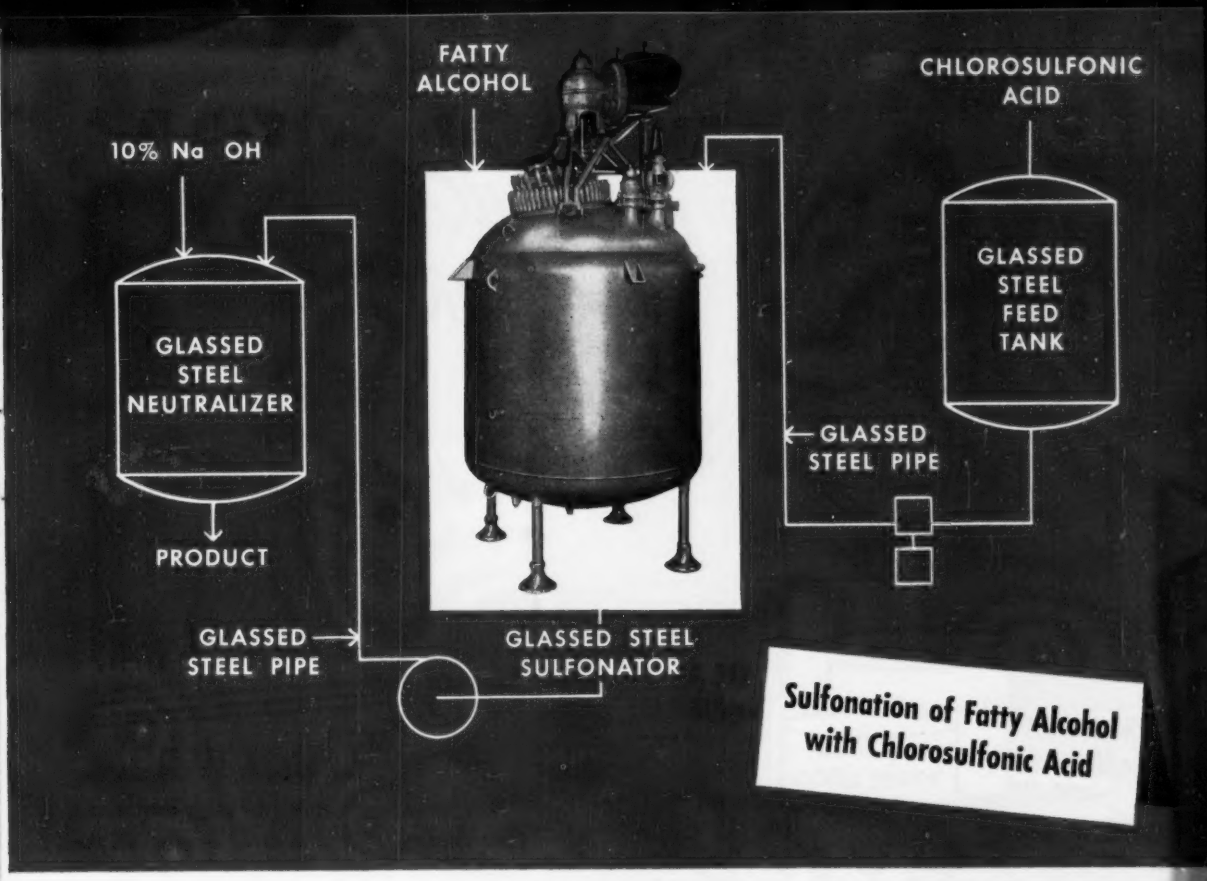
Two Plastics Up

Recent figures of the U.S. Tariff Commission show significant production increases in two classes of plastics.

Measured against the previous (July) month's report:

- Phenolic and Other Tar Acid Resins: up 25% from 23.0 million to 28.9 million pounds.
- Urea and Melamine Resins: sharply up 43% from 12.8 million to 18.3 million pounds.

In contrast, other classes of plastics either remained steady or even declined a bit.



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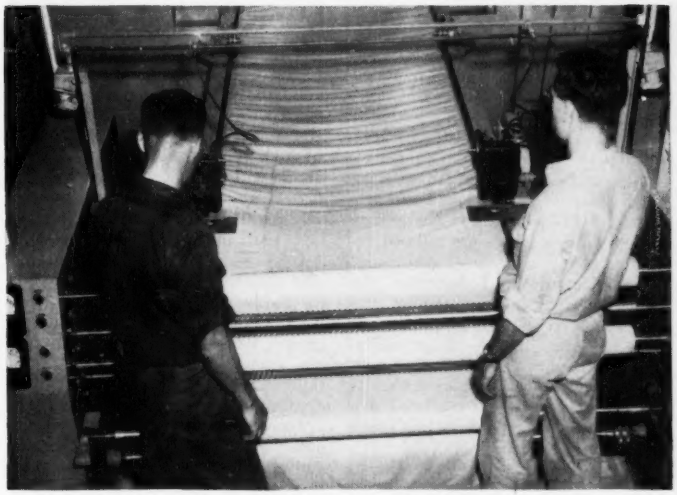

FABRIC FINISHING: Where antistatic agents play a part in textile production.

Reducing the Charge

Interwoven with the climbing use of synthetic fibers has been a need for chemicals to eliminate static electricity.

Main application of the antistatics is in textile mills, although there is a market for home-applied compounds.

Big need: A permanent mill-applied static-nullifying process that will remain with the fabric in consumer end-uses.

Part and parcel of the joys and woes brought in with synthetic fibers has been the problem of static electricity. The textile industry's concern with the matter was underscored last week, at the Boston meeting of the American Association of Textile Chemists and Colorists.

Primarily a mill problem, the tendency of modern synthetic fibers to acquire a charge is familiar to most consumers--which demonstrates the need for a process that will cure both industry's and the end-user's headaches.

And though mill-effective-only chemicals (along with a variety of mechanical aids) are the prime answers to the problems now, at least two semi-durable static nullifying agents have been developed, and more are on the way to handle the estimated 340 million pounds of nylon, Orlon, Acrilan, and dynel that is the industry's yearly goal for 1953.

That 340 million pound figure provides a clue as to the rising requirements for anti-statics; the need for such agents is roughly 1-3% of the fabric weight, forcasting a demand for better than 4 million pounds of the static stoppers.

Textile Millstones: The discomforts of clinging garments or of mild shocks that annoy consumers are trifling compared to the trouble static electricity causes in textile manufacturing. Output is reduced--charged yarns may be attracted to machinery parts, often causing time-consuming breaks. Quality is lowered--electrically produced lint accumulations frequently result in seconds, and charged material tends to soil easily. There's more wastage, and there are definite hazards to personnel.

In the manufacture of cottons and woolens, static electricity has presented difficulties, but careful selection of lubricating oils, use of high-humidity work rooms, and similar measures have made it a problem of relatively small concern. With the synthetics, however, and newly installed high-speed equipment, troubles have been multiplied.

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synthetics that is the root of the problem. There are three basic mechanisms that contribute to the charge on textiles. Of these—so-called double layer separation, friction, and flame—the first two are most important, according to Dexter Chemical Corp.'s Sidney Edelstein, a leading authority in the field. Double layer separation might be described as the charge resulting when two dissimilar materials which have been in contact are separated. Friction-produced charges result when dissimilars are rubbed together.*

Twin Solutions: To combat this triple threat of static electricity, this year has seen the introduction of at least two semi-durable static nullifying agents, plus a host of other mill-effective materials. Though neither of the longer lasting types is offered as a final solution, they do show that much progress has been made.

Late this summer Du Pont offered its TLF-701, particularly designed for Orlon and Dacron, and also recommended for other water insensitive fibers. A complex organic cationic compound that forms a bond with the synthetics after dyeing, it is applied (1-3% of the fabric weight) at the mill, and after developing with Duponol LS paste (or specially compounded TLF-721-B), is said to last through repeated launderings. Laundering with synthetic detergent lowers the effectiveness; it is restored by soap washing. Drycleaning results have not been particularly favorable.

Like TLF-701, another semi-durable compound developed principally for finished fabrics is Dexter Chemical's Lektrostat C. It is a cationic organic compound, designed for rayons, acetate, and the synthetics, and claimed to be moderately resistant to drycleaning and washing.

Processing Helps: For use in the mills, many firms offer both specific antistatics and other textile chemicals that include antistatic characteristics.† These compounds, which are usually offered for specific phases of textile

*Researchers have worked out an "electrostatic series" similar in set-up and application to the electromotive series: (positive end) glass, human hair, nylon yarn, nylon polymer, wool, silk, viscose rayon, cotton, paper, ramie, steel, hard rubber, acetate rayon, synthetic rubber, Orlon fiber, saran, polyethylene (neg. end). Use: If nylon is rubbed against cotton, the nylon is plus charged; with glass, nylon is negatively charged.

† Among the leaders in supplying antistatics: American Cyanamid; American Viscose Co.; Arkansas Co., Inc.; Atlantic Chemical Co.; Atlas Powder Co.; Colloids, Inc.; Quaker Chemical Co.; Richmond Oil, Soap and Chemical Co., Inc.; Standard Chemical Products, Inc.; Synthron.

Robot Paint Bartender

STREAMLINED AND COMPACT, a brand new paint color mixer has been developed by Standard-Toch Chemicals, Inc. (Staten Island, N.Y.). S-T President Milford Corbin stands by his firm's Automatic Color Carousel, introduced to the trade last week. The mixing unit, to be available at S-T retailers by next March, is a new approach to the old problem of providing a wide variety of reproducible paint colors. The machine, which is also an eyecatching display, automatically measures out (to an accuracy of nearly 1/100 of an ounce) the pigments needed to make any of the S-T colors, or almost any other color blend desired by the customer.

manufacture, deposit a film on the fiber designed to prevent a charge from accumulating.

Among the compounds whch have proved valuable as antstatics in nylon operations (to add to the headaches, a compound effective with one fiber isn't always effective with others) are stearamides of polyamines (Carbide and Carbon's Amide PES); cetyltrimethyl ammonium bromide; polyalkylene oxide derivatives of sorbitan monolaurate; and even Glim, General Aniline's ethylene-oxide condensation product best known as a liquid dish washer.

Mechanical Try: Chemical aids are far from the only methods tried to eliminate the static electricity problem. Aside from humidity control, grounding devices have been employed with metal foil or brushes to lead the charge from the fast-moving fabric web. Their drawbacks are: short life of the textile-contacting lead-offs, and incomplete charge removal.

Another ingenious approach is to have the textile pass over a radioactive bar—bombardment of ions is designed to dissipate the charge. Similar is the high voltage discharge device, which employs electrical equipment to provide the neutralizing charge.

In addition to high installation cost, these remedies can be of value only at specific take-off points, and can't be regarded as complete solutions.

For the consumer, a number of products have been offered, which permit him to apply short term protection against static electricity build-up. These products are fairly long lasting where the material isn't cleaned or washed often, such as on auto upholstery and carpets. For clothing, several rinsing compounds, effective until the garment is next washed, are available.

A mill-applied chemical agent has the inside track from a cost and convenience standpoint. There are pretty stringent requirements for these agents, but a 4 million pound market is worth shooting for.

Pink Green

It's almost heresy, but many pharmaceutical and specialty formulators would be happier if chlorophyllins weren't green. They stain, can't be used in hand creams or underarm deodorants. Now Rhodyll Chemical Co. (New York) offers a solution: Flesh colored Rhodacin Chlorophyll. Water soluble, virtually odorless, the pink chlorophyll is still in pilot production. But Rhodyll is readying facilities to grab a bigger chunk of the

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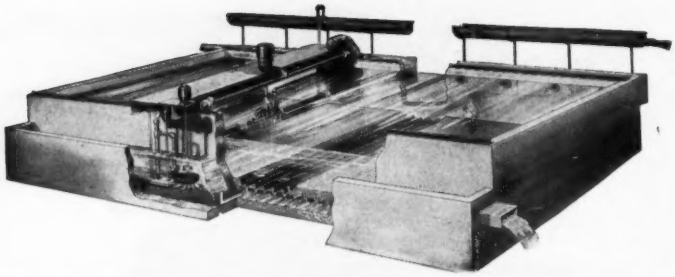

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SPECIALTIES . . . . .

estimated 6,500-7,000 lb.-per-month market for chlorophyllins.

Rhodyll's product is a derivative of the commonly used copper chlorophyllins. It retains the widely advertised properties—of deodorization and wound-healing—that its green counterparts have. Cost at present is high, about $120 per pound, compared to the ordinary green plant derivatives which have been reduced recently to about $60 per pound.

Use Booster: To judge from the variety of chlorophyll applications now—it's in everything from shampoos to inner soles—it's hard to believe that any possible outlets have been overlooked. Yet Rhodyll claims several applications have been by-passed, figures its neutral tinted material will permit several cosmetic applications where the green color is a drawback. It's taking care, though, to avoid the almost lunatic fringe of manufacturers who are trying to capitalize on the green boom.

Rhodyll is already supplying its flesh colored product for several ethical drug uses, as well as for toothpastes, and hopes to license it further. Rhodyll claims that despite the higher cost of its product, its overall cost is no greater—e. g., where 0.1% of ordinary chlorophyllins are required in most toothpaste formulations, 0.05% of Rhodacin Chlorophyll will do the trick.

Hospital supplies are the mainstays of the Rhodyll line. Since the firm's formation three years ago, Rhodyll has been working on the non-staining chlorophyllins, and limited amounts of its product have been available for about a year.

Charles H. Hacker developed the pink derivative, and worked out the manufacturing procedure. A patent on the process is now pending.

•

Conditioner Confab: Call for a trade practices conference to include all members of the chemical soil conditioner industry was sounded last week by R. A. Snelling, president of Dreer's Inc. (Philadelphia), maker of Fluffium.

•

GPA Winder Upper: Closing speaker at the convention of American Soap and Glycerine producers will be Carlos P. Romulo, Philippine ambassador to the U.S. The parlay is scheduled for January 27-29 at the Waldorf-Astoria, New York.

•

Drisudz for Crystamet: Recent addition to the Cowles Chemical Co. line is Drisudz, a soap-alkali laundry detergent, and not Crystamet, as previously reported here. Crystamet,

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EQUIPMENT—used-surplus

For Sale

Autoclaves, Steel, Hor. 66"x14'7", First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Calender, New 6x12", Johnson Joints, Complete. Eagle Industries, 108 Washington St., NYC.

Centrifugal 36"x40", Bird, Continuous, Consoli- dated Products, 18 Park Row, N.Y. 38, N.Y.

Centrifugal: Tolhurst suspended 26", stainless steel. Loeb Equip. Supply Co., 1927-A W. North Ave., Chicago 22.

Centrifugals, Bird 48"; Rub. Covered. First Ma- chinery, 157 Hudson St., N.Y. 13, N.Y.

Clarifier: Sharples Vapor-Tite, stainless steel. Loeb Equip. Supply Co., 1927-A W. North Ave., Chicago 22.

Dryer, Vacuum Shelf, 20 shelves, 59 x 78, pump, cond. (6). Consolid'd. Prod., 18 Pk. Row, N.Y. 38.

Dryers, 2 Blvk 32x90 dble. drum, SS accessories, comp. Eagle Industries, 108 Washington St., NYC.

Dryers, 2 Stainless Drums; 5'x10', First Machinery Corp., 157 Hudson St., N. Y. 13, N. Y.

Evaporator, film type. Also other equipment. FS-5842, Chemical Week.

Filter Press, Cast iron, 18", washing type. Almost new. FS-5838, Chemical Week.

Filter Press, 18" x 18", Sperry, Iron, P & F, 11 chambers (20) Consolidated Products, 18 Park Row, N.Y. 38.

Filter Press, 30"x30", Iron, Sperry, steam heated, 30 chambers. Consolidated Products, 18 Park Row, N.Y. 38, N.Y. Barclay 7-0600.

Filter Press, 42" x 42", Iron, Shriver, 18, 27, 36, 54 Chambers (12). Consolidated Products, 18 Park Row, N.Y. 38.

Filter Press, 30" x 30", Aluminum, 45 Chambers, Consolidated Products, 18 Park Row, N.Y. 38.

Filter—Sparkler SS model 33-D-17. Equipment Clearing House, 285 10 St., Bklyn 15.

Filters, all sizes and types. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Mill New 6x12; Johnson Joints, Complete. Eagle Industries, 108 Washington St., NYC.

Mills, Raymond #5047, High Side Roller, (2). Consolidated Prods., 18 Park Row, N.Y. 38.

Mills, Traylor tube, 5'x22", 5'x20', 4'6"x18'6", 4'x13', stone lined, pebble charge (4). Consolidated Products, 18 Park Row, N.Y. 38, N.Y.

Mixers, 700 gal. Turbo, Simplex, Jktd. (2). Con- solidated Products, 18 Park Row, N.Y. 38.

Mixer—Banbury #3 with 100 HP motor. Equip- ment Clearing House, 285—10 St., Bklyn 15.

Mixer, horiz. ribbon, 14'x7'6"x6', jktd. 450 cu. ft. Consolid'd. Prod., 18 Pk. Row, N.Y. 38.

Mixer: Readco double sigma arms, 250 gal., stainless steel. Loeb Equip. Supply Co., 1927-A W. North Ave., Chicago 22.

Pebble Mill: Hardinge 5'x36" buhrstone lined. Loeb Equip. Supply Co., 1927-A W. North Ave., Chicago 22.

Pebble Mills; 8'x8', Porcelain lined. First Machin- ery Corp., 157 Hudson St., N.Y. 13, N.Y.

Pebble Mills 10 gal. to 800 gal., porcelain lined, 20. Consolidated Products, 18 Park Row, NY 38.

Pumps, gear, mounted on ¾ HP back-gear motor 116 RPM (22) new, for heavy liquid, high pres. Valve Supply. 378 Bedford Ave., Bklyn, N.Y.

Pump SS #316, Wilfley Packless, 2½", 7½ HP. 2¾" SS, available with rubber lined primer, Valve Supply, 378 Bedford Ave., Bklyn, N.Y.

Pumps, S/S Centr. Labour, self-prim. 8 and 10 HP. (6). Consolidated Products, 18 Park Row, N.Y. 38.

chemical process industries

For Sale

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Tablet Press, No. 5½, Colton 3" maximum. Consolidated Products, 18 Park Row, N.Y. 38.

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Tanks, 2 10,000 gal. SS Storage, excel. Cond. Eagle Industries, 108 Washington St., NYC.

Tanks, Rubber Lined, 10,000 gal. vertical, closed, with Turbo Agitator 25 HP motor and Pipe coils. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tanks, Steel, Processing, 15,000 gal. vertical, 80 lbs. int. pr.; Turbo agitator 40 HP motor, pipe coils. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tanks, Alum, closed — 330, 480 and 1450 gal. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tanks, 6,500 gal. capacity, steel storage, recov- ered from dismantled tank cars, coiled & non-coiled. Marshall Railway Equipment Corp., 50 Church St., N. Y. 7, N. Y.

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Tanks, Mammuth Lined Hori. 12 — 9,145 gals. average cap. ea. 7' dia. 31' l. Call or write J. Bowers or R. J. Asbeck, Fox Brewing Co., 320 Ottawa Ave., Grand Rapids, Michigan.

Vacuum Pan: Harris 6' stainless steel. Loeb Equip. Co., 1927-A W. North Ave. Chicago 22.

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Urea. Prompt delivery offerings also invited. Tobey Chemical Company, 1472 Broadway, N.Y. Longacre 4-2520.

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Aluminum Push: Boosting paint sales, and giving its own aluminum powder business a lift as well, Reynolds Aluminum Co. has started extensive promotion of "liquid aluminum" paint. Campaign will be national before long.

•

Vinyl Grip: Three new vinyl adhesives, CD 201, 202, and 203, are being introduced by Chemical Development Corp. (Danvers, Mass.) for industrial applications.

•

Hosiery Aid: A laundry resistant hosiery finish, claimed to have anti-static and anti-pilling qualities has been developed by Scholler Bros. (Philadelphia) for industrial use. It's tradenamed DuraBeau Hysorb Finish.

•

No-Rust Primer: Pioneer Chemical & Mfg. Co. (Cleveland) is selling a new product, Pioneer Rust Preventive Pigmented Primer, for industrial uses. Formulation is based on Bakelite, china wood oil, and zinc chromate.

•

Latex Enamel: Glidden Co. (Cleveland) will hit the market next spring with what is claimed to be the first latex based enamel. Gloss isn't said to match that of oil enamels; price is about midway between oil enamels and rubber based semi-glosses. Full range of colors is promised.

•

C for Colds: Combining vitamin C with an antihistamine, Anahist Co. (Yonkers, N.Y.) has come up with a new cold tablet formulation to be marketed this winter.

•

Balance of Trade? Weights and measures of the U.S. have been urged on British drug makers by the Assn. of British Pharmaceutical Industry. One key change: Liquids would be sold by volume rather than by weight.

•

Upholstery Cleaner: Zetko A-1 Foma Cleaner is a new liquid upholstery cleaner developed by Frank Zetko (Pittsburgh). Liquid lathers quickly, is rubbed into upholstery and then wiped off.

•

Aerosol Award: The Aerosol Division of the Chemical Specialties Manufacturers Assn. Inc. will sponsor an annual contest in the field of aerosol packaging. First awards will be made at the annual CSMA meeting in New York December 8 and 9.

BOOKLETS . . . . . .

Chemicals

Wax Chemistry and Technology

44-p. booklet on waxes discussing (1) Waxes: A Specific Group, (2) Chemistry, Physics, and Analysis, (3) The Individual Waxes. Complete with tables and bibliography. L. Ivanovszky, "Glenbrook," 68, Park Street, Bridgend, Glam., Great Britain.

Ceramol

20-p. bulletin discusses oil-in-water emulsifying wax, used as a base for greaseless ointments, creams, and lotions. Emulsions prepared with Ceramol are stable over a wide pH range and are useful in incorporating acids, alkalis, and salts in cream and ointment bases, by melting and mixing with hot water. Aceto Chemical Co., Inc., 82 Beaver St., New York 5, N.Y.

Plastics and Resins

16-p. 1953 edition of "Condensed Reference File of Bakelite and Vinylite Plastics and Resins" contains 110 photographs showing applications and finished products. Descriptions of range of special and general all-purpose Bakelite phenolic, styrene and polyethylene and Vinylite plastics and resins are presented in 22 categories under such headings as (1) Molding and Extrusion Materials; (2) Protective Coating Resins; and (3) Laminating, Bonding, Adhesive Resins. Properties, applications and ability to be formed in manufacturing processes are included. Request on business letterhead, Bakelite Co., Division of Union Carbide and Carbon Corp., 300 Madison Ave., New York 17, N.Y.

Peracetic Acid

12-p. booklet contains information on bleaching acetate and nylon with peracetic acid. General information on the new bleaching process and seven detailed process descriptions as well as data on bleach formula, bath make-up, equipment and procedure are included. Request Bulletin 44, BECCO Sales Corp., Station B, Buffalo 7, N.Y.

Equipment

Industrial Trucks

4-p. circular describes advanced operational features of Spacemaster Model "M" both high and low lift trucks. Featured are aisle space savings, master control assembly, articulated linkage and the power gear drive. Specifications and a dimensional drawing are also included. Lewis-Shepard Products, Dept. R-I, Watertown, Mass.

Metal Recovery

9-p. reprint entitled "Metal Recovery by Ion Exchange" gives tables, charts, and data to illustrate some of the forms in which industrially important metals are present in solutions and how they might be recovered. C. F. Paulson, Special Application's engineer, The Permutit Co., 330 West 42nd St., New York 36, N.Y.

Furnaces

4-p. bulletin describes new line of laboratory furnaces for high and low temperature testing operations. Five different furnace models are described. Detailed information given includes: temperature ranges, features, dimensions and prices. Photographs show new floormount design. Request Bulletin 315, Burrell Corp., 2223 Fifth Ave., Pittsburgh 19, Pa.

Turbine-Generators

20-p. booklet illustrates and describes six principal types of industrial turbines. They are: non-condensing, non-condensing single-extraction, non-condensing double-extraction, condensing single-extraction, condensing double-extraction, and condensing. The characteristics of each are described in terms of the electrical power and process steam each is capable of delivering. Photographs and installation data on representative turbine applications in the textile, manufacturing, metals, paper, petroleum, lumber, chemical and process, and food industries. Request booklet B-5418, Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa.

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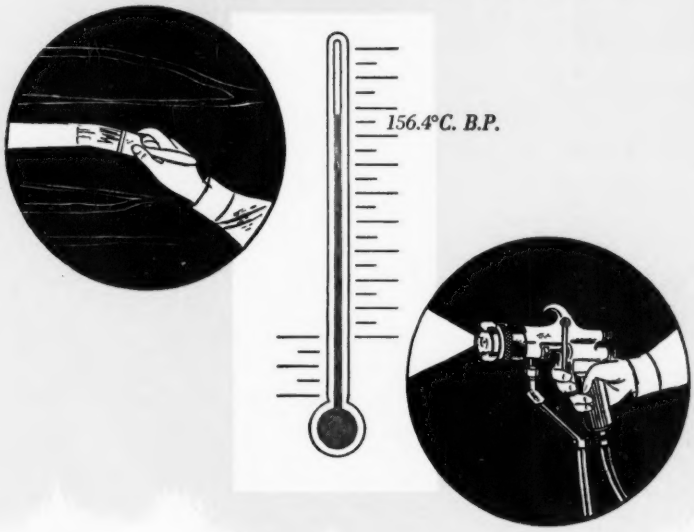

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Physical Properties of "CELLOSOLVE" ACETATE

FORMULA $CH_3COOC_2H_4OC_2H_5$

Molecular Weight	132.16
Specific Gravity	0.9748
Boiling Point, °C. at 760 mm. Hg	156.4
Vapor Pressure, mm. Hg at 20° C.	1.2
Flash Point, °F. (Cleveland Open Cup)	150

The term "Cellosolve" is a registered trade-mark of Union Carbide and Carbon Corporation.